

DIABLO FOOTHILLS REGIONAL PARK

East Bay Regional Park District



DRAFT
RESOURCE ANALYSIS
January, 1990



Digitized by the Internet Archive
in 2025 with funding from
State of California and California State Library

<https://archive.org/details/C124922054>

TABLE OF CONTENTS

I.	SUMMARY	Page
II.	Purpose of Resource Analysis	1
III.	Resource Analysis Process: Opportunities and Constraints	2
1.	Resource Analysis Process	2
2.	Opportunities	3
3.	Constraints	4
4.	Open Planning Issues	6
IV.	DIABLO FOOTHILLS REGIONAL PARK	7
V.	Character and Location	7
VI.	Land Use History	12
VII.	Regional Park Consideration and Purpose	14
VIII.	NATURAL RESOURCES DIV.	15
1.	DRAFT Topography and Visual Resources	17
2.	Topography	17
3.	Visual Resources	18
4.	Resource Issues	21
IX.	Water Resources and Water Quality	24
1.	Water Resources	24
2.	Water Quality	26
3.	Resource Issues	27
X.	Geology and Soils	30
1.	Regional Setting	30
2.	Geological Hazards	31
3.	Soil Stability	32
4.	Soils	33
5.	Resource Issues	34
XI.	Wildlife Resources	36
1.	Vegetation Types	36
2.	Special Status Plant Species	37
3.	Endemic Wood Plant Species	38
4.	Wildlife	39
5.	Potential Park Species	40
6.	Species at Risk	41
7.	Resource Issues	42
12.	Climate and Air Quality	43
1.	Climate	43
2.	Air Quality	44
3.	Resource Issues	45

December 27, 1989

Prepared by:

East Bay Regional Park District
Parkland Planning Department
11500 Skyline Boulevard
Oakland, California 94619

(415) 531-9300

TABLE OF CONTENTS

	<u>Page</u>
I SUMMARY	1
A. Purpose of Resource Analysis	2
B. Resource Analysis Findings: Opportunities and Constraints	3
1. Resource Analysis Findings	3
2. Opportunities	3
3. Constraints	4
4. Other Planning Issues	6
II INTRODUCTION	9
A. Description and Location	9
B. Land Use History	12
C. Regional Park Classification and Purpose	14
III NATURAL RESOURCES INVENTORY	17
A. Topography and Visual Resources	17
1. Topography	17
2. Visual Resources	18
3. Resource Issues	21
B. Water Resources and Water Quality	22
1. Water Resources	22
2. Water Quality	26
3. Resource Issues	27
C. Geology and Soils	27
1. Regional Setting	27
2. Earthquake Hazards	30
3. Slope Stability	30
4. Soils	31
5. Resource Issues	34
D. Biological Resources	35
1. Vegetation Types	35
2. Special Status Plant Species	40
3. Parkland Weed Pest Species	42
4. Wildlife	42
5. Potential Pest Species	45
6. Species of Special Interest	47
7. Resource Issues	49
E. Climate and Air Quality	50
1. Climate	50
2. Air Quality	51
3. Resource Issues	52

IV	CULTURAL RESOURCES INVENTORY	55
A.	Archaeological Resources	55
1.	Historical Resources	55
2.	Resource Issues	56
B.	Access, Circulation, and Transportation	58
1.	Existing Roadways	58
2.	Parking	58
3.	Trails	62
4.	Public Transportation	64
5.	Resource Issues	64
C.	Recreation Facilities and Usage	66
1.	Facilities	66
2.	Resource Issues	71
D.	Service Facilities and Utilities	72
1.	Police Protection	72
2.	Fire Protection	72
3.	Water Service	73
4.	Sewer, Wastewater, and Drainage	73
5.	Electricity and Telephone	74
6.	Gas	74
7.	Park Service Yard	74
8.	Resource Issues	74
E.	Legal Encumbrances Affecting Park Use	76
1.	Ownership of Park Land	76
2.	Easements	76
3.	Licenses	78
4.	Other Legal Agreements	78
5.	Resource Issues	79
F.	Zoning and Other Agency Designations	80
1.	Land Use Designations	80
2.	Adjacent Land Uses	82
3.	Resource Issues	82
V	BIBLIOGRAPHY	85
	References Cited	
VI	REPORT PREPARATION	91
VII	APPENDICES	93
	Appendix A - Purpose and Role of the East Bay Regional Park District	93
	Appendix B - East Bay Regional Park District Planning Process	94
	Appendix C - List of Plants	96
	Appendix D - List of Wildlife Species	112
	Appendix E - List of Fish and Aquatic Invertebrates	117

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1-1	Opportunities Diagram	5
1-2	Constraints Diagram	7
2-1	Location Map	10
2-2	Vicinity Map	11
2-3	Land Grant Map of Contra Costa County	13
3-1	Views Diagram	19
3-2	Pine Creek Watershed Map	23
3-3	Hydrology Map	25
3-4	Geology and Landslides Map	29
3-5	Soils Map	33
3-6	Vegetation Map	37
3-7	Special Protection Areas and Endangered Species	39
3-8	Potential Plant and Animal Pests	43
4-1	Indian Tribes Around Mt. Diablo	57
4-2	Existing Facilities and Significant Features	59
4-3	Public Transportation Routes	63
4-4	Castle Rock Recreation Area Facilities	67
4-5	Acquisition of Real Property	75
4-6	Ownership and Agreements	77
4-7	Contra Costa County General Plan Designations	81
4-8	City of Walnut Creek General Plan Designations	83

LIST OF TABLES

<u>Table</u>		
1	Water Quality Test Results for Castle Rock Spring and Woodhill Spring, Diablo Foothills Parkland	26
2	Maximum Earthquake Magnitudes	30
3	Diablo Foothills Soils List	32
4	Vegetation by Acreage	35
5	Castle Rock Park Use Three Year Summary 1986 - 1988	70

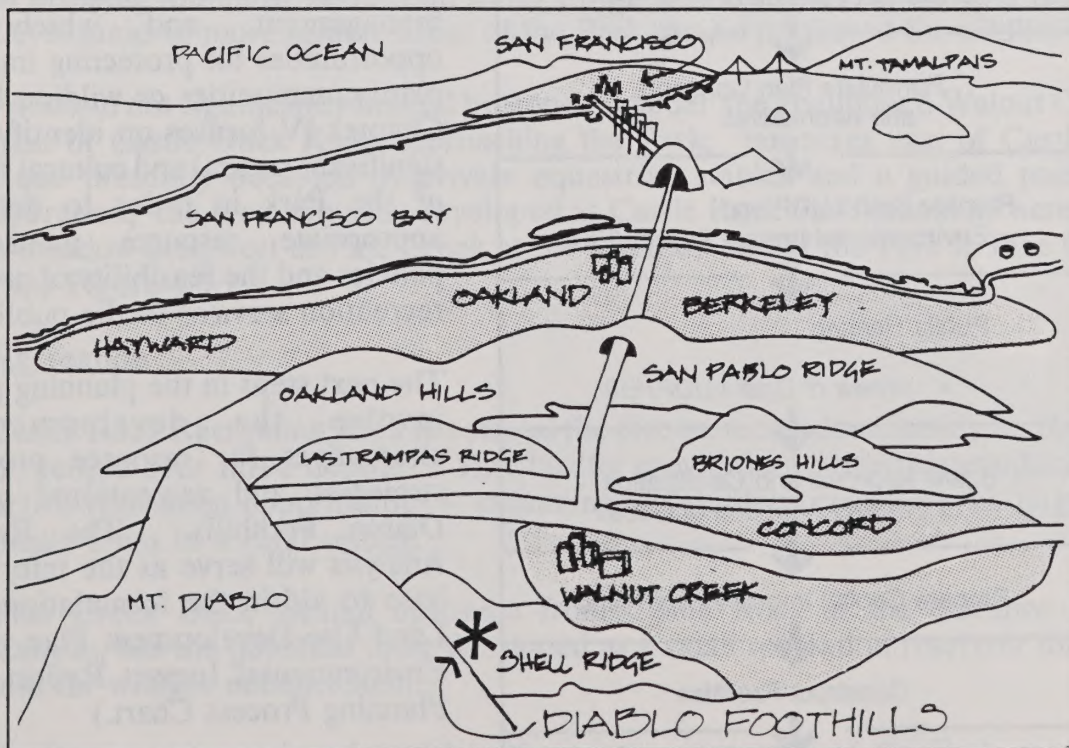


I. SUMMARY

The East Bay Regional Park District manages more than 40 parks totalling 66,000 acres of parkland scattered throughout Alameda and Contra Costa Counties. Bay area residents can explore bayshore parks, freshwater lakes, redwood forests, or wilderness ridgetops. Each park retains special features which attract visitors.

Diablo Foothills Regional Park is bounded by two of the most dramatic landforms in the East Bay: The Castle Rocks of Mt. Diablo and the "camelback" ridges that form Shell Ridge. These ridges link the Park to Walnut Creek Open Space and Mt. Diablo State Park which together represent one of the largest open space areas of the East Bay. Diablo Foothills also contains the Castle Rock Recreation Area, a major regional recreational facility serving Central Contra Costa County.

This unique combination of striking natural features, generous open spaces, and recreation facilities will make this new park a popular retreat.

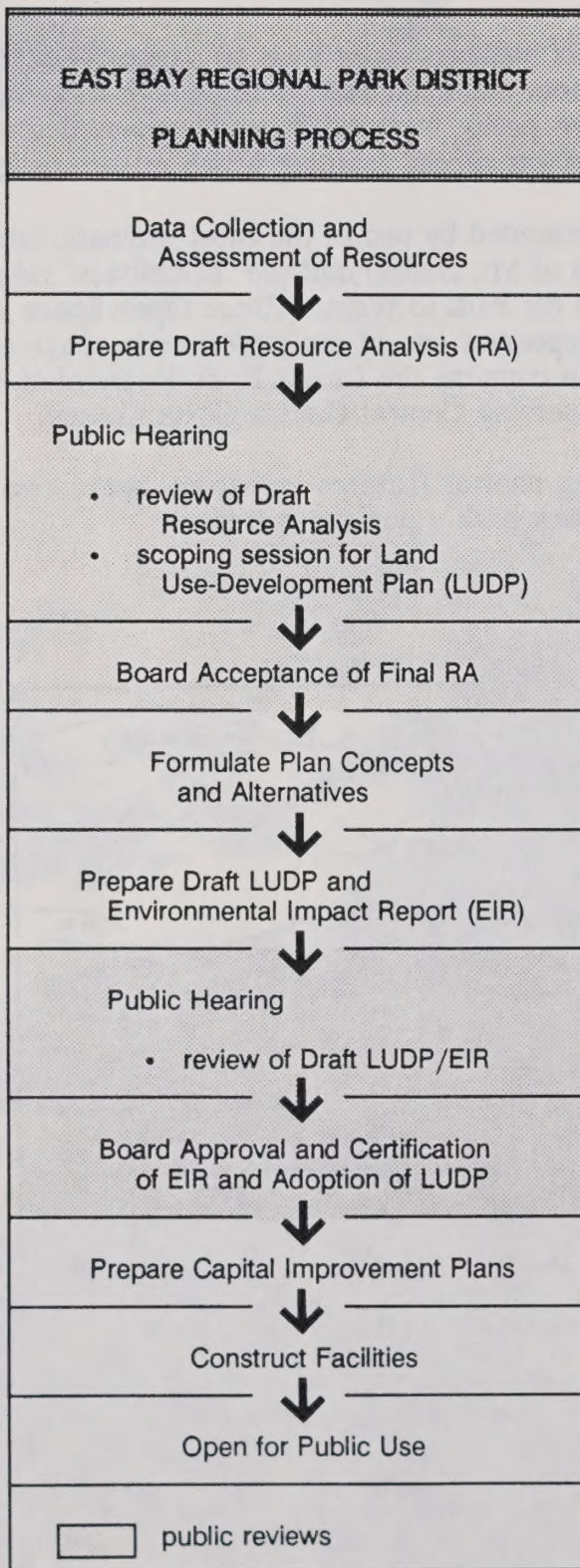


A. Purpose of Resource Analysis

The Diablo Foothills Resource Analysis is the first step in the planning process for Diablo Foothills Regional Park. The planning process is set forth in the East Bay Regional Park District 1989 Master Plan, the District's major planning policy document. This report will identify and highlight planning opportunities and constraints within Diablo Foothills and its surrounding environs.

Chapter III explores the physical and biological resources of Diablo Foothills in order to determine land-based planning constraints and opportunities. The analysis is intended to be a first step in determining those areas within the Park on which recreational development could take place and areas having constraints which would exclude any active land use. The analysis also identifies areas most appropriate for natural resource management, and which offer opportunities for protecting important plant communities or wildlife habitat. Chapter IV focuses on identifying the significant natural and cultural features of the Park in order to determine appropriate resource management policies and the feasibility of providing recreation services to the public.

The next steps in the planning process involve the development of alternatives for resource protection strategies and recreational uses in Diablo Foothills. The Resource Analysis will serve as the information base to aid in the formulation of the Land Use-Development Plan and the Environmental Impact Report. (See Planning Process Chart.)



B. Resource Analysis Findings: Opportunities and Constraints

1. Resource Analysis Findings

The Diablo Foothills Regional Park contains a diverse range of resource opportunities and potential constraints to the development of active and passive recreation in the Park. The 1989 Master Plan allows for development of recreation units in a Regional Parkland of up to 30 percent. Recreation Units are designated in the Land Use-Development Plan for areas which will contain higher levels of recreational use, e.g. picnicking. Where possible, these areas are clustered and are located on the edges of a park on level topography to have a minimum adverse affect on park resources. Most parklands contain considerably less than 30 percent development. The following discussion is a synthesis of the opportunities and constraints which will guide the formulation of the Land Use-Development Plan and resource management strategies for Diablo Foothills.

2. Opportunities

Meadow Areas

Several of the larger meadow areas are suitable for informal recreation areas including activities such as picnicking. They are also amenable for the construction of drinking fountains, equestrian water troughs, interpretive panels, and restrooms. Level areas in more remote areas of the Park can be preserved for wildlife habitat.

Parkland not significantly limited by slopes include: the abandoned Walnut Orchard, west of Castle Rock Road approaching the Park; ten acres east of Castle Rock Road presently occupied by private equestrian stables and a guided pack horse operation; the area currently developed as Castle Rock Park (about 15 acres); and a meadow area west of Pine Creek at the southern end of the Park in Pine Canyon. (See Figure 1-1.)

Recreation

Castle Rock Recreation Area has served the diverse recreational needs for thousands of people over three decades. This facility provides an attractive combination of active recreation opportunities -- swimming and outdoor games -- with large group picnic areas in a rural setting.

Pine Creek Dam, located upstream from Castle Rock at the entrance to Pine Canyon, has the potential to be developed as a small recreation reservoir for fishing and for wildlife enhancement.

Sandstone outcroppings located in the southwest corner of the Park are striking visual features that also provide the opportunity for interpretive natural history hikes.

Historic structures are located east of Castle Rock Road on Pine Creek, near the entrance to the Park. Old farm equipment, walnut hulling machines, and laborer shacks still stand, remnants of dry crop farming activities from the 1930's. These resources may provide the opportunity for historic cultural interpretation.

The existing recreational facilities of Castle Rock combined with the natural resources of Diablo Foothills offer tremendous potential for serving the active and passive recreational needs of the growing communities in Central Contra Costa County.

Views

The many magnificent vantage points along Shell Ridge and lesser ridges and knolls on the site offer short-range scenic views of Mt. Diablo, the Castle Rocks, Lime Ridge and the central Contra Costa County urban and suburban areas. Long-range views sweep across the vast parallel ridges of the Coast Range, northeast to the Delta and south over the San Ramon Valley and Pleasanton Ridge. View points on Diablo Foothills should be incorporated as adjuncts to the trail system by provision of minor trail access and signing where appropriate.

Springs

The Park has three freshwater springs. One is located on the east-facing slope of Pine Ridge uphill from Pine Creek, across from Castle Rocks. A second spring is situated on the west-facing slope of Shell Ridge near the Stonegate development property line. The third spring is found one ridgeline northwest of the previous spring. Development of these springs could be considered to provide trail use drinking water and livestock watering facilities.

3. Constraints

Constraints within Diablo Foothills include both physical and man-made limitations on recreational development. (See Figure 1-2.)

Topography/Steep Slopes

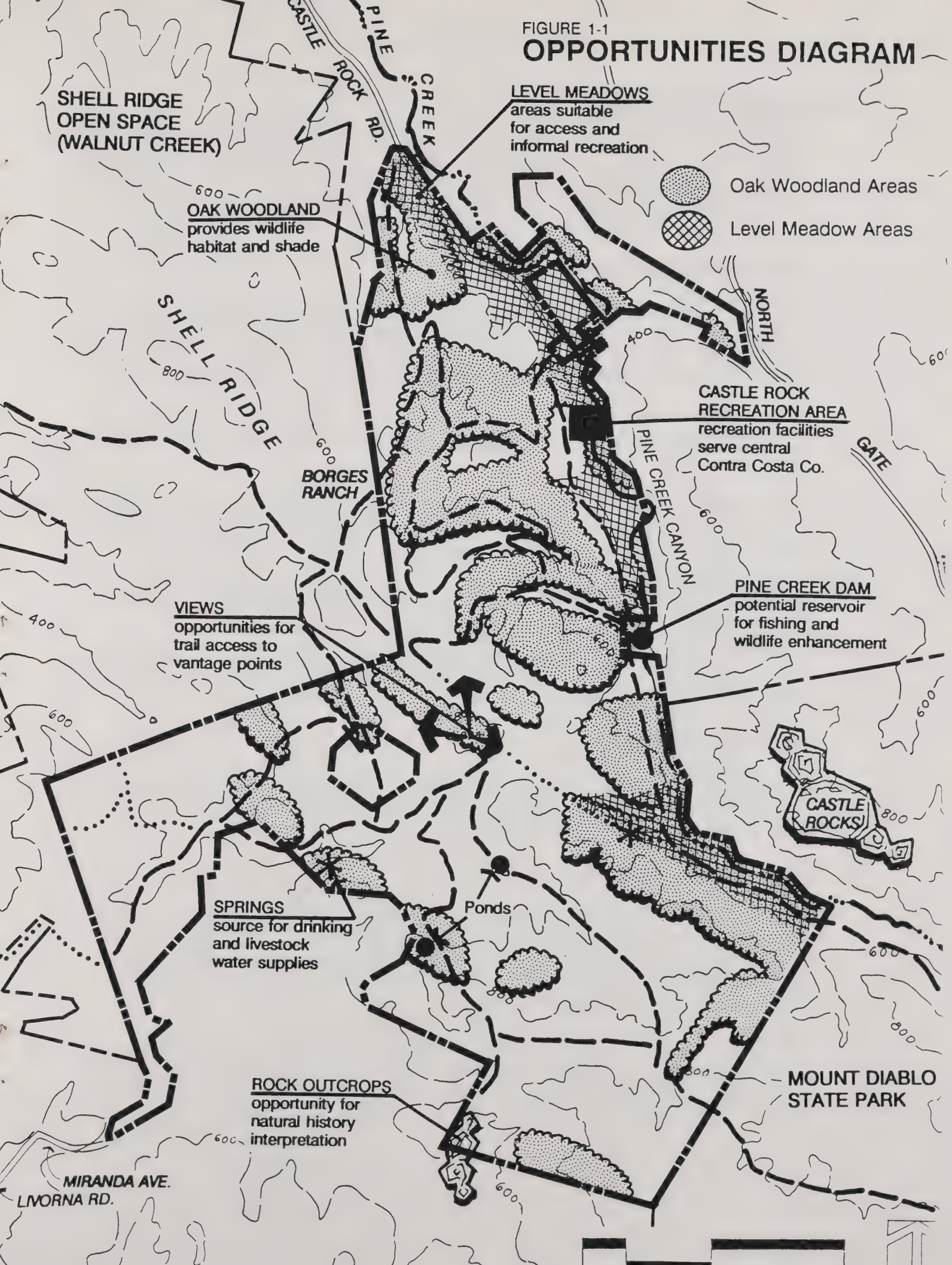
Development of the parkland is constrained by steep slope gradients. More gentle slopes are limited to narrow corridors along the tops of ridges or in the bottom of canyons. Approximately 30 acres of the Park are not significantly limited by slope steepness. Development in the remaining areas would expose highly erodable soils. Due to the limitations of the slopes and the soils, any park development should be confined to relatively level areas.

Biological Sensitivity

Several populations of rare plants occur in Diablo Foothills. Three of these populations are found in woodland habitats within Pine Canyon and the fourth is located along a ridge above Pine Canyon to the west. Mt. Diablo Fairy Lantern, Crimson Sage, and Yerba mansa are all unique plants growing in Pine Canyon. The Fragrant Fritillary is scattered throughout a ridgetop grassland.

FIGURE 1-1

OPPORTUNITIES DIAGRAM



A variety of predatory birds (the golden eagle, the prairie falcon, and the turkey vulture) nest in the Castle Rocks in the adjacent Mt. Diablo State Park and forage over Diablo Foothills. The Alameda whipsnake, listed as threatened under the California Endangered Species Act, has been observed in the Park. Any public access development of these sensitive plant and animal habitats should be designed to minimize conflict between the public and wildlife.

Lack of Public Access and Public Facilities

At present, the only public staging into the Diablo Foothills from Walnut Creek is a small ten to twelve vehicle road pull-off at the end of Castle Rock Road just outside the Park gates. The temporary parking area provides access to an equestrian/hiking bypass trail which bypasses the Castle Rock Recreation Area.

The use of the large 300-350 vehicle parking area at the entrance of Pine Canyon is available solely to the groups visiting the reservation-only facilities of Castle Rock Recreation Area.

A 12 space staging area was recently constructed adjacent to the Stonegate Subdivision in Alamo. This staging area is not yet signed as an East Bay Regional Park District access and the trail link to Diablo Foothills is undeveloped.

The existing public entrances to the Park are not disabled accessible or served by public transportation.

Sufficient vehicular, equestrian, and disabled access should be provided at the northern edge of the Park. Directional signs and public amenities should also be provided at both entrances to the Park.

Adjoining Development

Potential noise and traffic conflicts exist between residences bordering the perimeter of the Park and park users. New developments, with associated traffic and noise, may reduce the amenities of the open space lands.

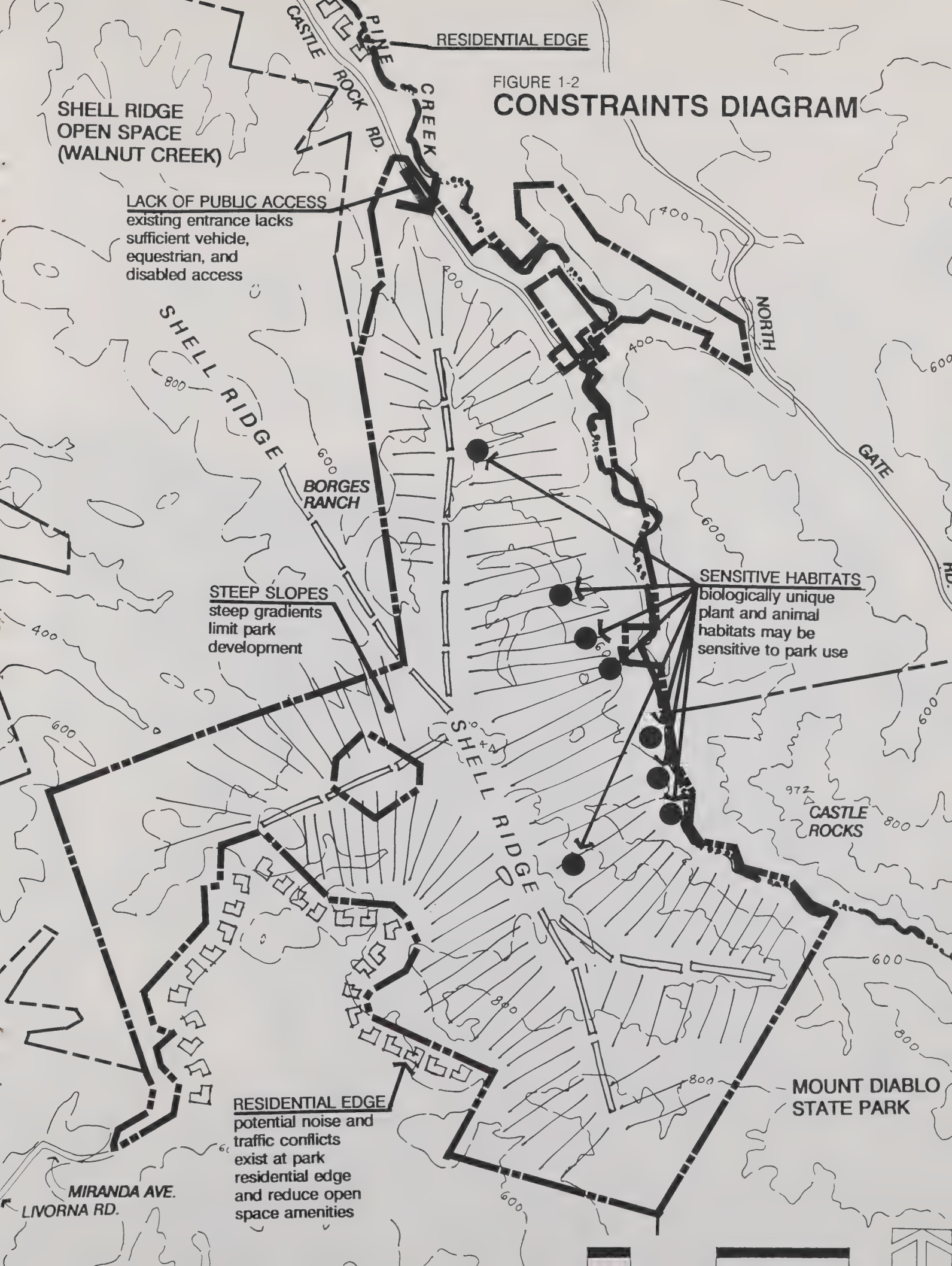
4. Other Planning Issues

Diablo Foothills Regional Park shares a boundary with two other open space agencies: Shell Ridge Recreation Area owned by Walnut Creek Open Space and Mt. Diablo State Park owned by the California Department of Parks and Recreation. Park use regulations, signing and resource management issues should be coordinated between the three open space agencies.

The State of California owns 350 acres of Diablo Foothills and leases the property to EBRPD. An operational agreement between the State Parks and EBRPD regarding the resource management and land use of the state-owned portion of Diablo Foothills should be negotiated.

FIGURE 1-2

CONSTRAINTS DIAGRAM





II. INTRODUCTION

A. Description and Location

Diablo Foothills Regional Park and Castle Rock Recreation Area are part of the rumpled landscape of Mt. Diablo, an anomaly both geologically and sociologically; an island of undeveloped land in the midst of one of the country's most rapidly urbanizing areas. (See Figure 2-1.)

These parks are located in the heart of Contra Costa County adjacent to the City of Walnut Creek, California. The two parks, totalling 978 acres, adjoin the foothills on the west side of Mt. Diablo, one of the most prominent natural landmarks in the Bay Area.

Diablo Foothills/Castle Rock fits like a piece in a jigsaw puzzle of open space lands. The 20,000 acres of Mt. Diablo State Park are adjacent to the east and south of the Park. To the west lies the City of Walnut Creek's 1,200-acre Shell Ridge recreation area. Open space lands in private ownership to the north are used for agriculture. Residential development is occurring to the south. (See Figure 2-2.)

Much of Diablo Foothills extends across Shell Ridge, a landmark ridge east of Walnut Creek. The strikingly scalloped forms of Shell Ridge invite park visitors to explore the grassy rounded knolls, the secluded canyons, and the open savannah uplands, bright with wildflowers in the spring months. The vegetation of the site ranges from grassland and oak savannah on the hills to riparian and oak woodland in the valley bottom. These riparian areas support a variety of wildlife populations. Chaparral and pungent sages occur in two locations within the Park. The steep sides of Pine Canyon contain the streamside oak woodlands of Pine Creek and the upturned sandstone strata known as the "Castle Rocks" that lend their name to Castle Rock Recreation Area.

Castle Rock Recreation Area is a 15-acre park that can accommodate groups of 75 to 3,000 people. The Diablo Foothills surround Pine Creek valley where Castle Rock Park was developed as a recreational facility 30 years ago. Castle Rock offered picnicking, swimming, field games, and other activities under private ownership and operation until 1985 when the East Bay Regional Park District acquired the site. In 1986 the District leased the facility to "The Picnic People", a concessionaire, to operate as a private reserve group facility.

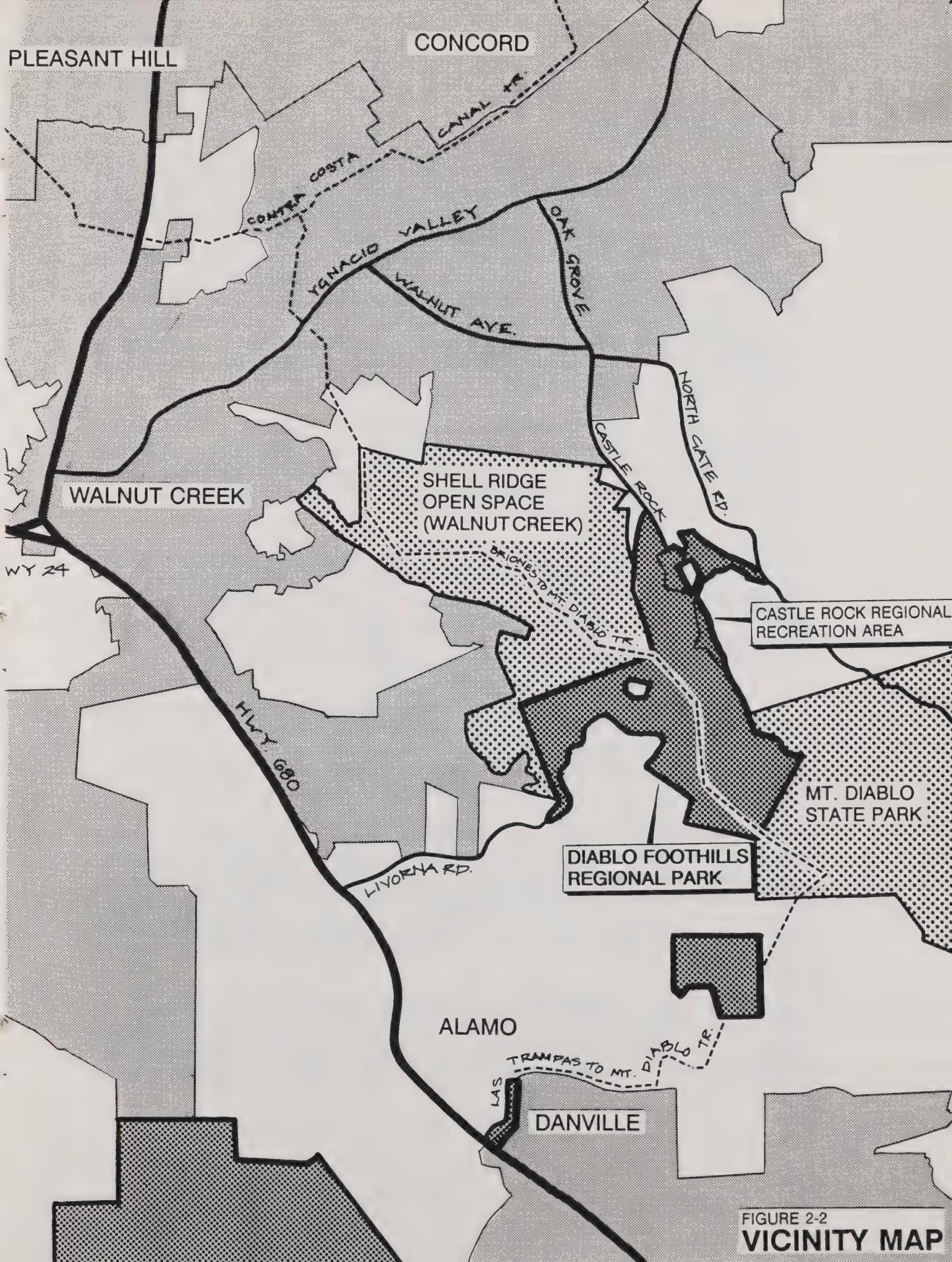


FIGURE 2-2
VICINITY MAP

B. Land Use History

When the first Spanish explorers ventured into Contra Costa in 1772, they found Bay Miwok Indians living in the foothills of Mt. Diablo. The long grasses and rolling foothills of Mt. Diablo appealed to the Spaniards as potential ranchland. When the Mexican government took over in California in 1821, it conferred huge land grants to the soldiers who had marched with the explorers. Dona Juana Sanchez de Pacheco was granted Rancho Arroyo de las Nueces y Bolbones (Creek of the Walnuts and Indians). Its acreage included the western slopes of Mt. Diablo and what is known today as Diablo Foothills Regional Park. The Pacheco family used its land for grazing cattle, but did not settle on the Rancho. With the American acquisition of California, the Rancho became known by the shorter name of San Miguel Rancho. (See Figure 2-3.)

Before 1855 there had been very little agricultural activity in the Walnut Creek/Diablo Foothills area. In 1855 American settlers introduced fruit culture into the Ygnacio and Pine Valleys. Pear, apricot, walnut and almond tree orchards were planted. Abandoned walnut processing buildings and machinery still stand next to Pine Creek in Castle Rock Park.

In 1902 William Ford purchased 750 acres of the original San Miguel Rancho and operated a cattle ranch on the land until 1938 when it was first opened as a park. During World War II it was used as a rest camp by military personnel from Camp Stoneman in Pittsburg. After the war an officer stationed at Camp Stoneman leased the property and operated it as a park for eight years. After that Ron Ford, William's son, continued to maintain 230 acres as Castle Rock Park.

In 1971 a group of Contra Costa residents, recognizing the rapid urbanization around Mt. Diablo, created an organization they called Save Mt. Diablo. This group worked with the State Parks, the cities of Walnut Creek, Concord and Clayton as well as the East Bay Regional Park District to preserve open space around the foothills of the mountain.

Diablo Foothills was designated in the East Bay Regional Park 1980 Master Plan for development as a regional park. The District recognized the need for an active recreation area in Central Costa Contra County. The District also responded to the movement to preserve the foothills between Mt. Diablo State Park and Shell Ridge. Concurrently, Diablo Foothills would function as a major link in the 20-mile regional trail system connecting Walnut Creek, Mt. Diablo State Park and Briones Regional Park.

In 1976 the District purchased 488 acres of Castle Rock Ranch from the Annie M. Ford estate. This included the orchards, creeks, and hills lying across Shell Ridge. Ron Ford's property, consisting of 230 acres and the Castle Rock Park facilities (two swimming pools, dance floors, barbecue pits and sports fields) was acquired in 1985.

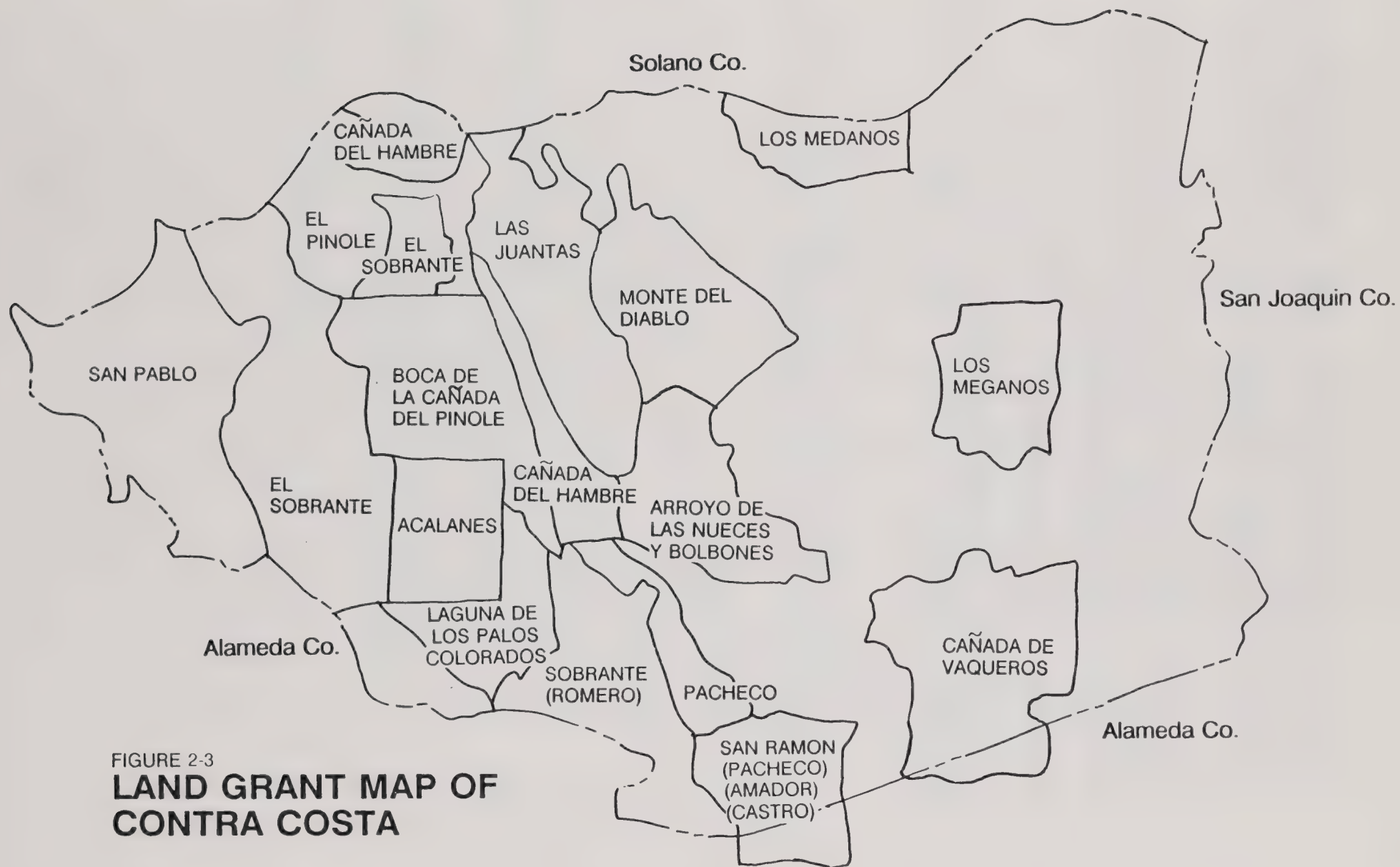


FIGURE 2-3
**LAND GRANT MAP OF
CONTRA COSTA**

These purchases represented the District's program to acquire lands for public use on the western slopes of Mt. Diablo. In June 1989 the District received 260 acres of land from the Woodhill Development Company as a result of public pressure on subdividers to donate acreage to the neighboring Park District to preserve this open space from development as a transportation corridor.

Public access to Diablo Foothills Regional Park is by Castle Rock Road off Ygnacio Valley Road, a county maintained road serving the northeast section of the site in the Walnut Creek area. A staging area adjacent to the Stonegate Subdivision serves the Alamo area at the end of Livorna Road east.

C. Regional Park Classification and Purpose

The lands that form Diablo Foothills are designated as a Regional Park. The East Bay Regional Park Master Plan - 1989 states the following purpose and minimum standards of a regional park:

Purpose

A Regional Park provides a spacious land area with outstanding natural features and many outdoor recreation opportunities for the enjoyment and education of the public.

Minimum Standards

To be considered as a Regional Park, an area must have the following characteristics:

- a. Be an area of land, or land and water, of 500 or more acres.*
- b. Have, or potentially have, a scenic or natural character in 70 percent to 90 percent of its area. The District designates this portion as a Natural Unit for planning and management purposes.*
- c. Be able to accommodate a variety of recreational activities on up to 30 percent of its area. The District designates this portion as a Recreation Unit for planning and management purposes.*

EBRPD Master Plan - 1989 page 47



III. NATURAL RESOURCES INVENTORY

A. Topography and Visual Resources

1. Topography

The Diablo Foothills Regional Park sits at the edge of the southern end of the Ygnacio Valley and the northeastern edge of Stone Valley on the western flanks of Mt. Diablo. Park topography can be characterized by the parallel ridges that slice through the landscape running northwest to southeast. Most of the site stretches across Shell Ridge, a landmark ridge east of Walnut Creek. The northern half of the site includes the upper slopes of a minor ridge branching from the main formation on the western side of Pine Canyon. The sides of Pine Canyon, a major topographic feature of the Park, are formed by Shell Ridge to the west and Pine Ridge to the east, just outside of the park boundary on Mt. Diablo State Park.

The Park primarily consists of open, rolling ridgelines with gentle slopes on the ridgeline, dropping off to the steep sides of Pine Canyon. Slopes of over 30 percent occur throughout most of the Park. The Park also extends to the northeast to



*View from Diablo Foothills across the Foothills, Concord, Lime Ridge to Delta
(looking north)*

include part of the flat plain at the confluence of Pine Creek and Little Pine Creek. Level areas are very limited in this Park and total about 30 out of 978 acres. These flat areas include an abandoned walnut orchard, east of Castle Rock Road, and the area currently developed as Castle Rock Recreation Area.

Elevations in the Park range from 300 feet at the valley bottom along Pine Creek to over 1,000 feet at the southeastern corner of the Park on Shell Ridge.

2. Visual Resources

From the Diablo Foothills one can view sweeping panoramas of the entire San Francisco Bay Region, dramatic geological formations, patches of urbanized residential development, and rolling grasslands. The visual resources of the Park can be described in terms of on-site views (those views visible to people at the Park) and off-site views (those views of the Park visible to people outside of the Park). (See Figure 3-1.)

On-Site Views

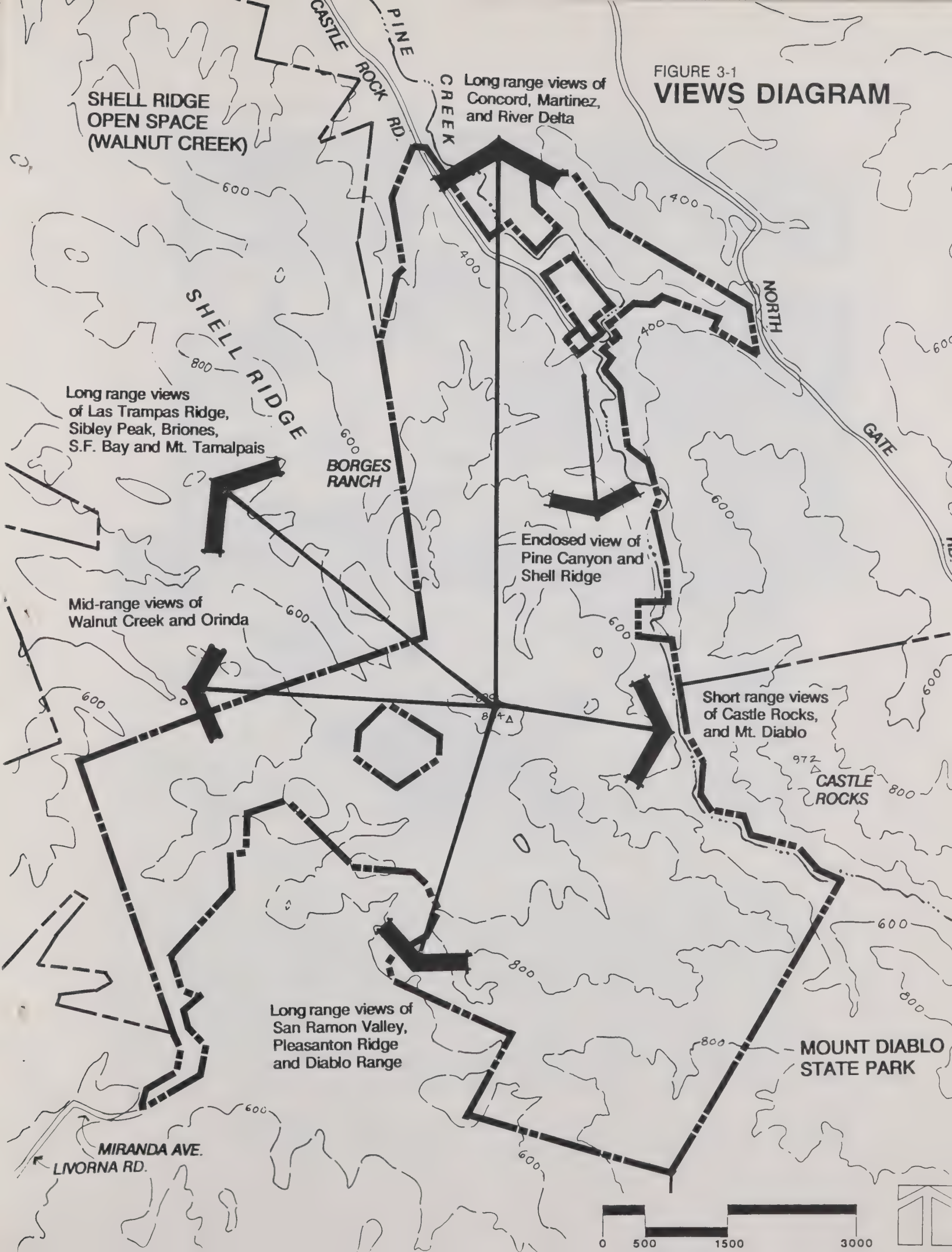


Wind Cave

Within Diablo Foothills Regional Park, views are available from inside the Pine Canyon area, along Castle Rock Road, or from several promontories along the ridgelines. In Pine Canyon topography limits views to oak and bay tree shaded Pine Creek and woodlands sprinkled with open meadows. The blue and coast live oak wooded slopes to the east lead up to Shell Ridge with its rolling treeless meadows of grasses splashed with wildflowers in the spring. To the east, views of wooded slopes lead to Pine Ridge and the huge slabs of fragmented sandstone, the Castle Rocks, which tower above the forest canopy. The Castle Rocks are the predominant visual feature of Diablo Foothills in both short- and long-range views. Natural forces of a different kind created another noteworthy geological sight, -- the small wind caves off of Pine Canyon Trail to the west across from the Flood Control District's earthen dam.

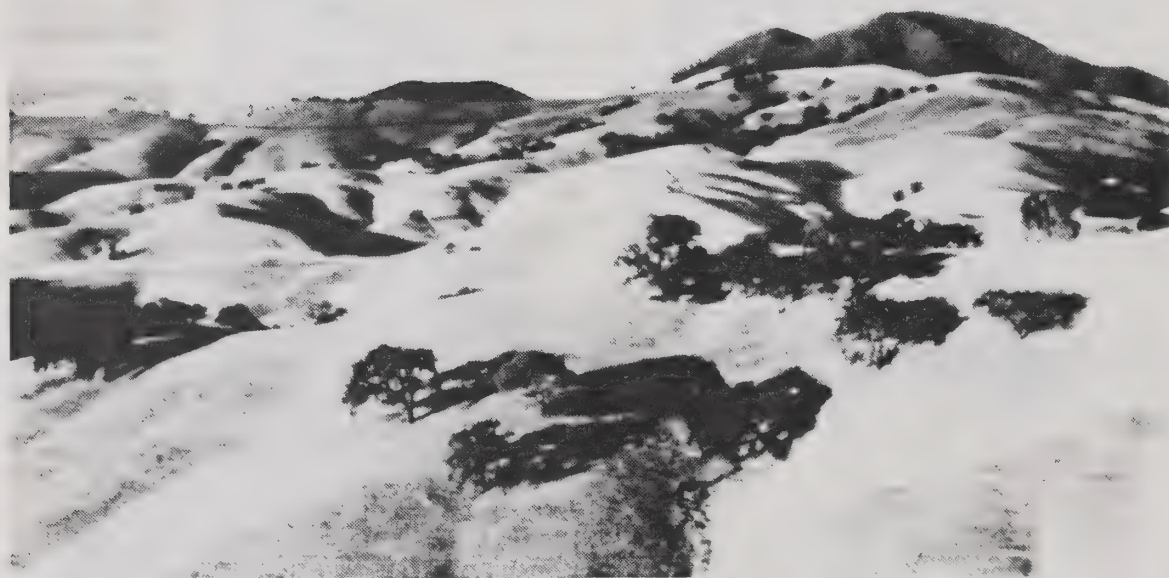
Views of natural features from the remote wooded enclosure of Pine Canyon contrast with the more open views from the valley bottom at the northern access

FIGURE 3-1
VIEWS DIAGRAM



off of Castle Rock Road. Views of the surrounding area from within the northern end of the Park include a walnut orchard, old oak groves, the facilities of Castle Rock Recreation Area and the barns, homes, stables and corrals of three inholdings: The Ford Life Estate, Castle Rock Arabians, and D & F Pack Guided Horse Tours.

Long-range views from atop the Diablo Foothills reveal of the topographic forms and features that define the east bay region. The main peak of Mt. Diablo looms up close to Diablo Foothills dominating the views and open rolling rangeland directly to the east. To the north and northeast the web of waterways and islands of the Sacramento River Delta and the hills of Solano County lie beyond the towns of Concord and Martinez.



View of private rangeland and Mt. Diablo (looking northeast)

Furthest west Mt. Tamalpais appears above San Francisco Bay. From Shell Ridge looking west one also views the vast parallel ridges of the Coast Range extending toward the Bay and southward. These include the familiar ridgeland peaks of the San Leandro Hills, Las Trampas Ridge and Eagle Peak, Anthony Chabot and Redwood Regional Parks, Sibley Peak and San Pablo Ridge and Briones Regional Park. The growing communities of Walnut Creek, Orinda, and Alamo also included in the western views. The East Bay Municipal Utility District is currently constructing a reservoir water tank on their inholding towards the western edge of Diablo Foothills near the Stonegate service entrance. The tank will be visible from several sections along the Briones to Mt. Diablo Trail.



*View of Borges Ranch Walnut Creek Open Space and
Las Trampas Regional Wilderness Area (looking southwest)*

Views to the south overlook the San Ramon Valley and the backdrop of Pleasanton Ridge.

In general, views of encroaching development are not visible from the Park. The residential development of the Stonegate subdivision can only be seen from the western-most edge of Diablo Foothills. Expanding residential development along Castle Rock Road may potentially affect the views along the road towards the Park entrance.

Off-Site Views

Much of the Park is concealed from view by the steep sides of Pine Canyon and is, therefore, not visible from off-site vantage points. The rolling hills of Shell Ridge are the predominant feature of the Park, visually accessible from both the East Livorna and Castle Rock Road entrances.

3. Resource Issues

- The visual impact of the East Bay Municipal Utility District water tank on the Park will need to be ameliorated.
- Expanding residential development along Castle Rock Road may potentially affect the views along this road towards the Park's entrance.

B. Water Resources and Water Quality

1. Water Resources

The Diablo Foothills parkland is situated within the eastern portion of the Walnut Creek watershed which drains about 150 square miles (95,600 acres) of Central Contra Costa County (Figure 3-2). Walnut Creek is a tributary to Carquinez Strait about two miles easterly from the Interstate 680 Benicia-Martinez Bridge.

Within the parkland, Pine Creek drains all but the west-facing slopes of Shell Ridge. Pine Creek originates at about 3,200 foot elevation on the western and northwestern slopes of Mt. Diablo and flows in a northwest direction until it merges with Walnut Creek near Monument Boulevard in Pleasant Hill at an elevation of 45 feet (Figure 3-2). Water flow rates in Pine Creek reflect seasonal rainfall patterns with major flows during winter storm periods subsiding to nearly dry (intermittent) conditions during the summer dry season. Calculated maximum stream flows for Pine Creek near the park entrance is 3,200 cubic feet per second (CFS) for a 3-hour high intensity storm with a recurrence interval of one in one hundred years (CCWD, 1978).



Pine Creek Dam Spillway

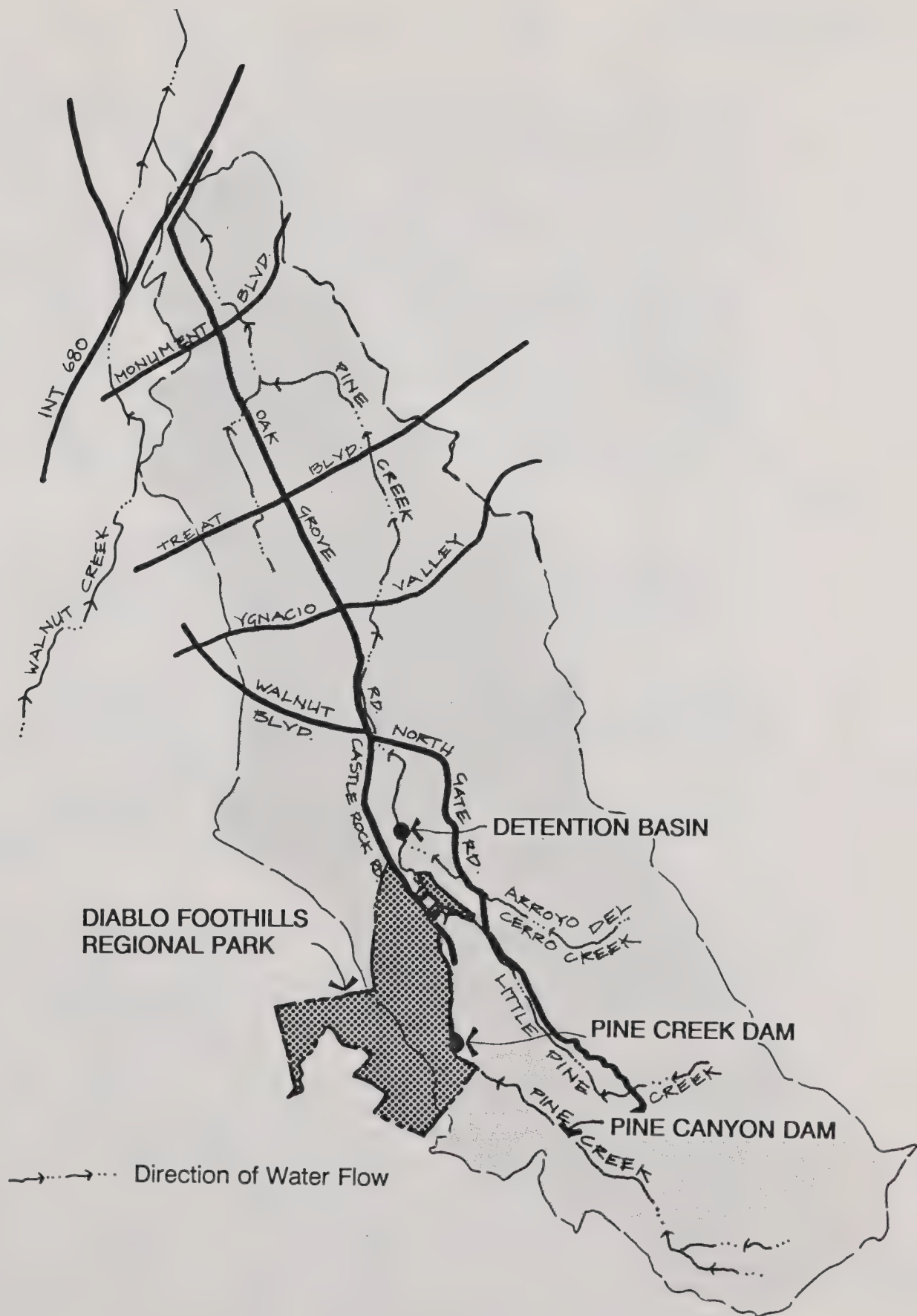


FIGURE 3-2
PINE CREEK WATERSHED

Several flood control and water supply projects have been implemented within the upper Pine Creek watershed, but none are on park property. However, one project was constructed adjacent to the Park along Pine Creek and was named the Pine Creek Dam project (Figure 3-2). This prominent 80-foot high earthen fill dam, including a spillway, was constructed to State Bureau of Dam Safety specifications in 1955 and is operated by Contra Costa County Flood Control and Water Conservation District as a storm surge basin, temporarily impounding water draining from the 4.2 square mile watershed upstream. Gate valve controlled flow releases diminish peak downstream flows and are made from a 60-inch diameter corrugated metal pipe culvert extending through the west corner of the base of the dam. Current operation is to leave the culvert gate valve completely open allowing gradual, nearly complete draining of the impounded water between storms. By changing the operation of the valve controlling water releases it may be possible to create a permanent small recreation reservoir (five to six surface acres). Any effort to create such a recreation reservoir would require approval from local and state agencies having jurisdiction.

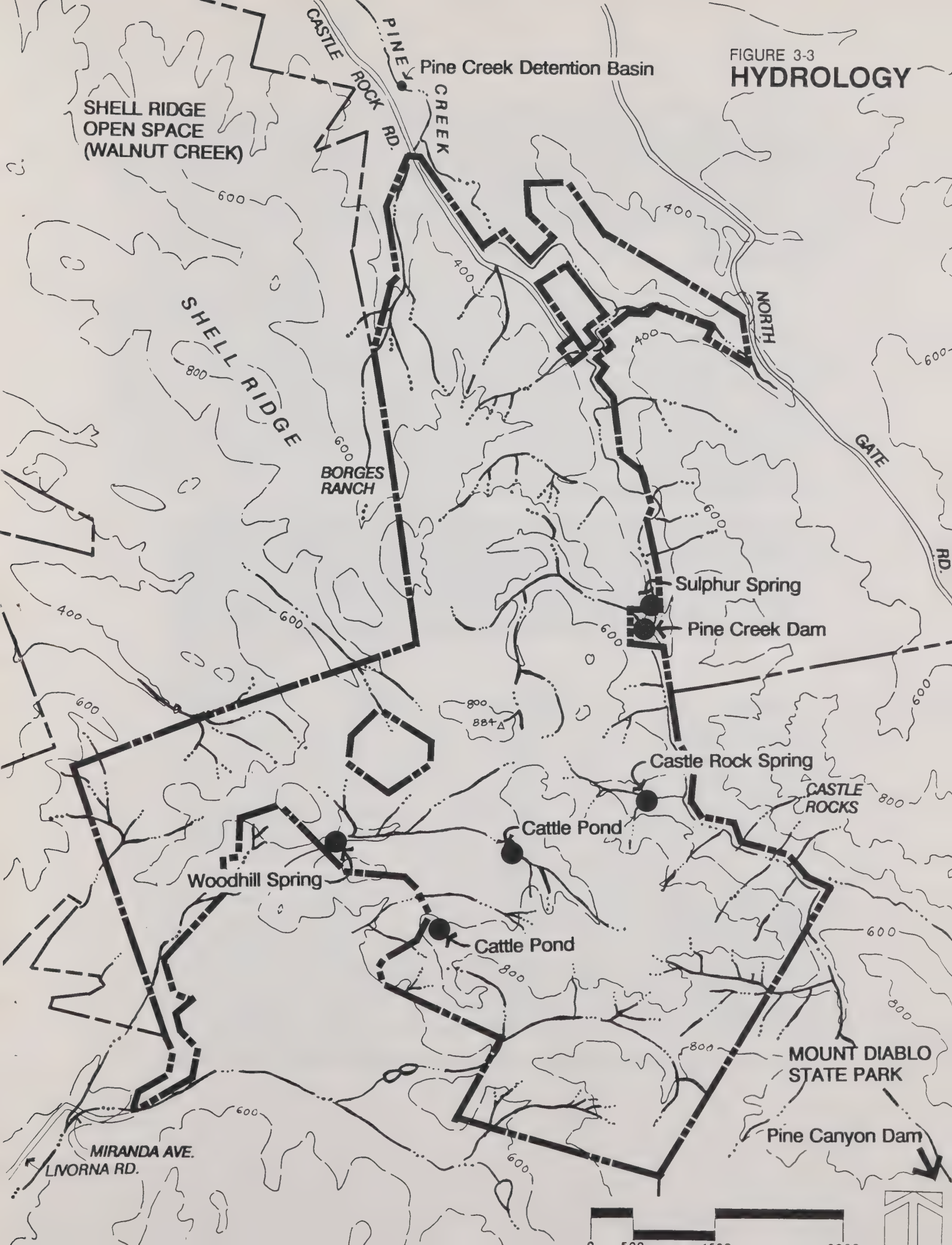
Other upper Pine Creek flood control facilities include Pine Canyon Dam (actually constructed in 1951 as a private water supply) located upstream within Mt. Diablo State Park and the most recently constructed Pine Creek Detention Basin located just downstream from the park boundary across from Northgate High School.

Several small cattle watering ponds are located on the west slopes of Shell Ridge located within park boundaries and along Shell Ridge Open Space (see Figure 3-3). These ponds were created by previous landowners who constructed small earthen dams across gullies to catch local runoff. All of these ponds become dry to nearly dry during summer months for lack of recharge. They all would benefit from dredging if they are to remain as cattle watering areas. Sedimentation has restricted capacity causing them to dry up sooner in the summer than otherwise and limits their usefulness for cattle watering.

Groundwater resources include two wells constructed near the Castle Rock concession recreation complex to provide water for that facility. A water tank was installed by EBRPD to store water for peak use periods until municipal water could be brought into the Park. These facilities are no longer needed since a municipal (Contra Costa Water District) water line now services the park facilities.

Four known perennial springs exist on parklands. One (Sulfur Spring) is a foul smelling high sulfur content spring, situated near Pine Creek channel a short distance downstream of Pine Creek Dam. The other two are freshwater springs. One (Castle Rocks Spring) is situated on the east-facing slope of Pine Ridge uphill from the Pine Creek, across from Castle Rocks. This spring once provided water to a nearby cattle watering trough, but needs to be redeveloped to increase flows and provide protection of the water supply. The second freshwater spring (Woodhill Spring) is situated on the west-facing slope of Shell Ridge near the Stonegate Development property line. This spring is sufficiently developed to provide continuous water to two cattle watering troughs at that location. However, the spring is not fenced or

FIGURE 3-3
HYDROLOGY



otherwise protected from the livestock. The fourth spring is one ridgeline northwest of the previous spring and consists of a pipe water trough system. The pipe extends from a wooden dilapidated spring box partially filled in so that flow is restricted. Redevelopment of this spring system should be considered. Development of livestock watering facilities by use of hillside troughs may be a desirable alternative to unrestricted use of Pine Creek and ponds that currently exist.

2. Water Quality

Since a municipal water supply serves water needs at the Castle Rock concession recreation area, and since East Bay Municipal Utilities District regularly monitors the water quality provided to its service area, Water Management staff no longer regularly monitors water quality at that facility. Past water quality monitoring data for the well water supply indicated the groundwater in the vicinity of the concession area was marginal or at times exceeded the California Drinking Water Standard of 250 mg/l sulfate and often exceeded the recommended limit of 0.3 mg/l iron (probably due to rusty pipes). Chronic low level coliform bacterial contamination problems due to unknown sources required manual chlorination and disinfection of the distribution system.

TABLE 1

**Water Quality Test Results for Castle Rock
Spring and Woodhill Spring, Diablo Foothills Parkland**

<u>Parameter</u>	<u>Castle Rock Spring</u>	<u>Woodhill Spring</u>	<u>Recommended State Drinking Water Standard</u>
Alkalinity, Total mg/1	300	250	None
Alkalinity, Phenol mg/1	< 10	< 10	
Chloride, mg/1	45	25	250
Cooper, mg/1	0.03	0.04	1
Hardness, Total mg/1	150	300	None but
Hardness, calcium mg/1	100	160	>300 very hard water
Hardness, magnesium mg/1	50	140	0.3
Iron, mg/1	0.07	0.29	10
Nitrate as N mg/1	0.3	0.6	10
Nitrate as NO ₃ mg/1	13.2	26.4	45
pH units	7.80	7.25	6.5 - 8.5
Sulfate mg/1	175	160	<250
Specific Conductance 10-6 mhos	1680	1260	None
Orthophosphate mg/1	0.12	0.18	None

Water samples were collected from the two freshwater springs -- Castle Rock Spring and Woodhill Spring -- to provide some characterization of ground water quality in other areas of the Park. Table I contains general mineral quality results for these two springs. More data (repeated samplings and expanded testing) are necessary before making any conclusive assessment on potential developable beneficial uses of these water sources. Preliminary indications are that they could be developed to provide fountains for public drinking water in addition to the current use for livestock and wildlife water sources.

3. Resource Issues

- There is potential to create a small recreation (fishing) reservoir by changing the operation of Pine Creek Dam to create a permanent pool.
- The two existing wells need to be evaluated for abandonment or maintained to provide a backup water supply.
- Alternative water supply for livestock should be considered to prevent the unrestricted use of Pine Creek.
- Consideration should be given to the development of springs to provide trail use drinking water supplies.

C. Geology and Soils

1. Regional Setting

The uplifted and faulted strata of the Diablo Foothills are situated on the far western flanks of the Mt. Diablo piercement structure. Mt. Diablo, which was formed by intense point compression between the Concord and Greenville faults zones, has tilted and overturned the Tertiary and Cretaceous sedimentary rocks of the local area. The bedrock units of the Diablo Foothills generally have a northwestern strike and dip toward the southwest. The rock formations increase in age toward the northeast. Geographically, the Park is located at the southern end of Ygnacio Valley and the northeastern edge of Stone Valley. Topographic relief ranges from approximately 300 to over 1,000 feet. The youngest rock units within the site are simply Holocene sands, gravel and other sediments deposited by streams within the valley bottoms of Pine Creek and tributaries that drain into Stone Valley. These sediments are designated as Quaternary Alluvium (Qa) on the Geology and Landslide Map (see Figure 3-4). The geologic portion of the map is adapted from Diblee (1980). Within the southwest corner of the Park non-marine sediments (Tps) are characterized by weakly cemented pebble conglomerates, sandstones and claystones of Pliocene age.



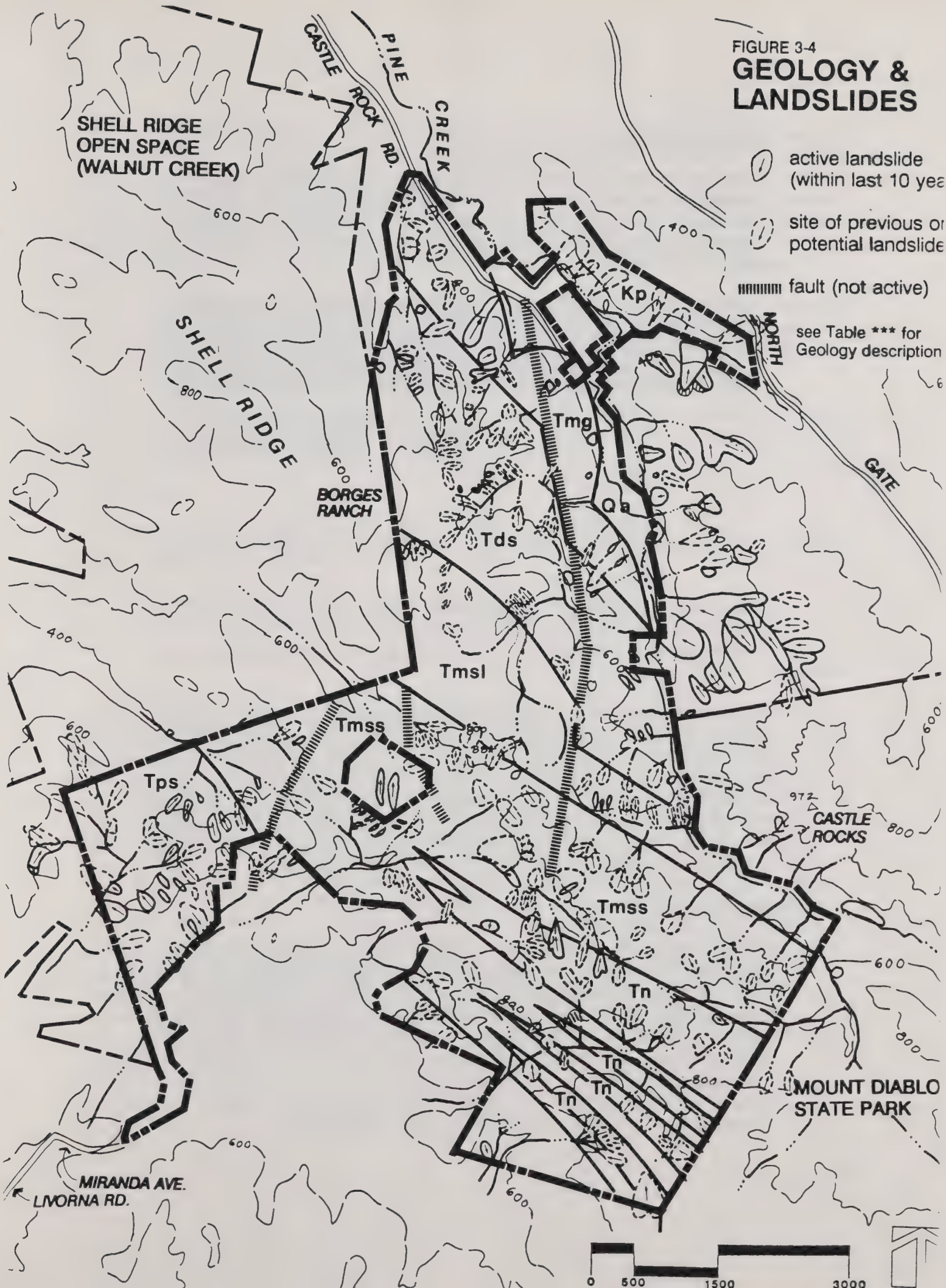
Castle Rocks and Pine Creek Canyon

Toward the southeast corner of the Park, non-marine blue to gray pebbly sandstones of the Neroly Formation (Tn) are interfingering with marine sandstones (Tmss) that exhibit clam shell beds in the Shell Ridge area. Northeast of these units marine siltstones (Tmsl), with locally massive sandstone beds, outcrop and bisect the central region of the Park. The latter three bedrock types are all of Miocene age.

The Domengine sandstone (Tds) occurs through the central northern portion of the Park and forms spectacular outcroppings that include the Castle Rocks, just outside the Regional Park boundary, and some smaller, equally unique outcroppings in the southwest corner, just north of the State Park's China Wall. Rock outcroppings serve as raptor habitat. The Meganos Formation (Tmg), just northward of the Domengine Sandstone, is comprised of clay shales. The latter two bedrock types are of Eocene age.

The oldest bedrock unit is Cretaceous in age and exists in the extreme northeastern corner of the Park. The Panoche Formation (Kp) here consists of micaceous clay shale and minor sandstone. Three unnamed and apparently inactive faults are shown to trend in a north-south direction and offset the bedrock in a right lateral fashion.

FIGURE 3-4
**GEOLOGY &
 LANDSLIDES**



2. Earthquake Hazards

There are no known active faults within the parkland boundary. This Park is, however, in an area that can be affected by seismic shaking from any one of the active faults that comprise the San Andreas fault system. Maximum earthquake magnitudes (Wesson et al, 1975) and distance of fault from the park site are listed below.

TABLE 2		
Maximum Earthquake Magnitudes		
<u>Fault</u>	<u>Approx. Distance</u>	<u>Estimated Maximum Magnitude Earthquake</u>
Concord	< 1	6.3
Calaveras	2.5	7.3
Pleasanton	8	5.7
Greenville	10	--
Hayward	11	7.5
Antioch	11	6.6
Livermore Valley		
Faults	21	--
San Andreas	28	8.5

The maximum intensity of ground shaking expected has been previously assessed (ABAG, 1988) and is dependent upon the different types of bedrock present at this site. On a scale that ranges from very violent to negligible, the predicted maximum shaking intensity is fairly correlative to the different bedrock units. For example, a very strong intensity would be apparent for the Qa unit in the Pine Creek region. A strong intensity is predicted for the Tds, Kp, Tmss and Tmg units and a weak intensity for Tmsl and Tps. The risk of ground shaking damage for wood frame dwellings is considered to be very low to low (0-1 percent).

3. Slope Stability

The Geology and Landslide Map depicts landslides and sites of previous or potential landsliding. The landslide analysis was based upon interpretation of 1988, stereo black and white photographs. The landslides that are designated as active have features that indicate movement within the last ten years. Sites of previous or potential landsliding are represented by actual dormant landslide deposits, such as from earthflows, and by scars left behind after the soil has evacuated the hillslope, such as from debris flows. Since "new" landslides often occur within sites of previous instability, it is important to recognize dormant deposits or scars as potential sites of reactivation or of future generation of new instabilities.

The debris flows are common on the steep ridges that form within the well drained bedrock units that contain high amounts of sand and courser materials. These types of slides are frequently situated at the heads of small channels and once a slide is activated, it can rapidly travel long distances down a channel system. Therefore, runout distances of debris flows should be given consideration for any structural improvements located on alluvial fans. The structural facilities at Castle Rock entrance are in an area of low probability for impacts from debris flow runout.

The earthflows, on the other hand, are more pervasive in the bedrock units that contain high amounts of fine silt and clay, such as in the shales of Tmg and Kp. Earthflows generally do not travel as far as debris flows. Instead, they tend to move incrementally and can slowly disrupt foundations or trails.

A major earthquake could result in the initiation and/or reactivation of some landslide processes. But, for the most part, landslides in this region appear to be the result of either intense or long duration storms.

4. Soils

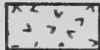
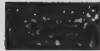
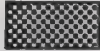
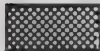
The soils of Diablo Foothills are of the Los Osos-Millsholm-Los Gatos Association, which is characterized as:

"Moderately steep to very steep, well-drained clay loams and loams which formed in material weathered from interbedded sedimentary rock on uplands."

Soil Survey of Contra Costa County

Nearly 75 percent of the Park is overlain by one of the three soils from which the Association derives its name; most of the remaining soils are considered to be closely related. (See Figure 3-5.) Soil characteristics vary locally depending on the specific nature of the underlying sedimentary rock (mostly sandstone, some shales) and topography. Only two small areas, comprising less than 25 acres, are considered suitable for agricultural cultivation. Slope is limiting (in excess of 30 percent) over most of the Park; about half the Park suffers nutrient deficiencies as well. There appears to have been some dryfarm grain production in the past, and there are the remains of an abandoned walnut orchard along the southwest side of the entry road. Otherwise, range is the only appropriate and known historical agricultural use. District evaluation indicates that over 95 percent of the property is suitable rangeland. Except for approximately 16 acres of rock outcrop and rocky drainage bank, which support chaparral vegetation, there is no soil limitation to grassland or oak woodland, which are divided about 60 percent/40 percent respectively. Grassland dominates on slopes facing into the sun (south-facing to west-facing), while woodland dominates on the topographically shaded slopes (east-facing to north-facing).

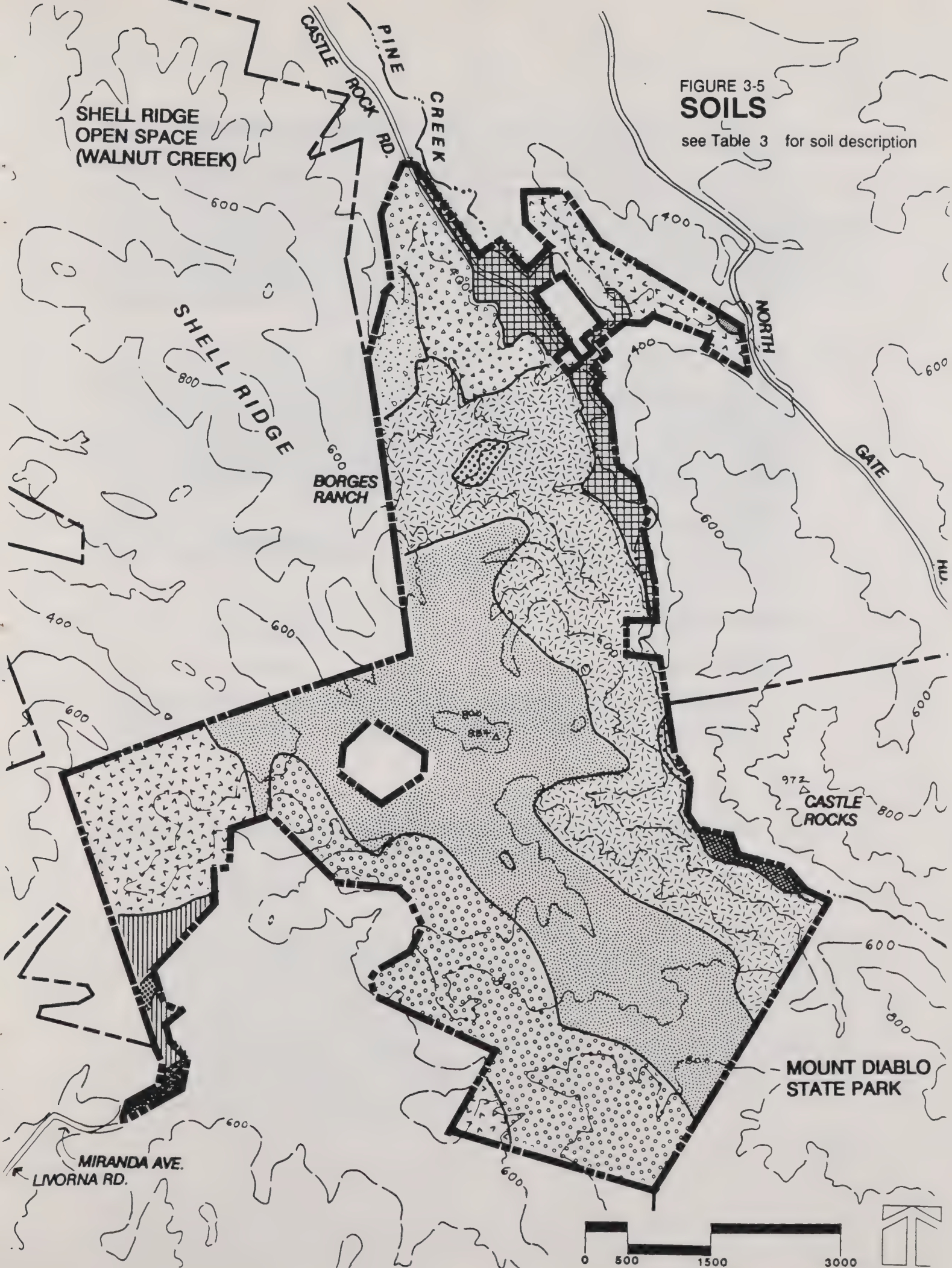
TABLE 3
Diablo Foothills Soils List

<u>Symbol</u>	<u>Name</u>	<u>Slope</u>
	Alo clay	30-50%
	Altamont clay	9-15%
	Altamont-Fontana Complex	30-50%
	Briones fine sandy loam	2-5%
	Clear Lake clay	2-5%
	Cropley clay	2-5%
	Gaviota sandy loam	30-50%
	Los Gatos loam	30-50%
	Los Gatos loam	50-75%
	Los Osos clay loam	30-50%
	Millsholm loam	50-75%
	Rock outcrop	50-75%
	Zamora silty clay loam	2-5%

For complete soil descriptions refer to:
USDA Soil Conservation Service 1977
Soil Survey of Contra Costa County

FIGURE 3-5
SOILS

see Table 3 for soil description



The soils of the Park are relatively high in erodability, particularly if bare of vegetation. This is largely a function of the high erosive force of water flowing on steep gradient. Except for the surfaces of the various access roads, the Park has good vegetative cover, and erosion problems are limited. The soils are not considered suitable for engineering purposes, and construction of paved roads, earth fill structures, should be confined to relatively flat areas. The limitations to these uses are less related to the character of the soil material itself than to topography. Existing installations illustrate that the soil material is acceptable for the construction of low dams necessary to create stock ponds; however, there are few undeveloped sites which are topographically suited to such construction.

About 30 acres of the Park, are not significantly limited by slope steepness. These areas are: 1) abandoned walnut orchard, west of Castle Rock Road, approaching the Park, plus a small parcel east of Castle Rock Road, between the road and Pine Creek (about ten acres); 2) the area currently developed as Castle Rock Park, west of Pine Creek at the end of pavement (about 15 acres); and 3) a small flat east of Pine Creek at the southern extreme of the District's ownership (about five acres). Of these, areas 1 and 2 are considered nutrient deficient (a correctable, or manageable condition), but not otherwise unsuitable for agriculture, and without serious limitation for engineering purposes. Area 3 has no agricultural limitations, and its only serious engineering limitation is a low permeability which would make the site unsuitable for septic tank installations.

5. Resource Issues

Geology

- Consideration should be given to protect the unique rocky outcropping in the southwest corner of the Park, just north of the Mt. Diablo State Park's China Wall.

Soil

- Ninety-seven percent of the site is in slopes over 30 percent limiting any development of facilities to approximately 30 flat acres, including the area currently developed as Castle Rock Recreation Area (15 acres).

D. Biological Resources

1. Vegetation Types

Several distinct plant communities are represented in Diablo Foothills Regional Park. These include annual grassland, oak woodland, oak savanna, chaparral, and riparian communities. (See Figure 3-6.) An inventory of the plant species occurring or expected to occur in each of these types within the Park is included in Appendix B.

The following is a summary of the total acreage occupied by each vegetation type:

TABLE 4
Vegetation by Acreage

<u>Vegetation Type</u>	<u>Number of Acres</u>
Annual Grassland	554 acres
Oak Woodland	282 acres
Oak Savanna	107 acres
Chaparral	13 acres
Riparian	< 1 acre
TOTAL:	957 acres

Annual Grassland

The annual grassland vegetation type is found throughout the Park from the lower slopes to the upland areas along Shell Ridge where it is most extensive. The flora is dominated by introduced annual grasses and herbs which became established throughout much of California as a result of historical floristic changes associated with the arrival of European settlers. These species include such grasses as soft chess and ripgut brome (*Bromus*), wild oats (*Avena*), annual ryegrass (*Lolium*), and wild barley (*Hordeum*). The dominant broadleaf plant is filaree (*Erodium*), of which there are several species. This flora is now considered the climax vegetation on most coastal prairie grassland sites.

Native plants primarily consist of herbaceous wildflower species such as the brodiaeas (*Brodiaea*), sanicles (*Sanicula*), lupines (*Lupinus*), clovers (*Trifolium*), mules ear (*Wyethia*), mariposa lily (*Calochortus*), California buttercup (*Ranunculus*), vetch (*Vicia*), soap plant (*Chloragalum*), yarrow (*Achillea*), farewell to spring (*Clarkia*), red maids (*Calandrinia*), California poppy (*Eschscholzia*), etc. that grow interspersed among the non-natives.

While native perennial bunchgrass growth is sparse and limited to a few isolated patches, native annual fescue grass (*Festuca*) occurs abundantly among the introduced grasses.

Species composition within the annual grassland type can vary appreciably from one location to another (McNaughton, 1968). These differences can be attributed to variations in slope, aspect, soil changes, and available nutrients. Hence, plant species composition in any given location within the Park can vary according to local site conditions. If left unmanaged, many annual grassland sites are subject to invasion by weed and brush species, and amass large amounts of thatch, which can limit plant diversity and lead to increased wildfire hazards.

Oak woodland

Oak woodland is a vegetation type where tree cover is typically greater than 30 percent, or more than 50 trees per hectare. It seldom forms a continuous cover over large areas, but rather exists in a mosaic with other plant communities. The density of oaks in relation to other associated tree species may vary considerably, as does the understory vegetation.

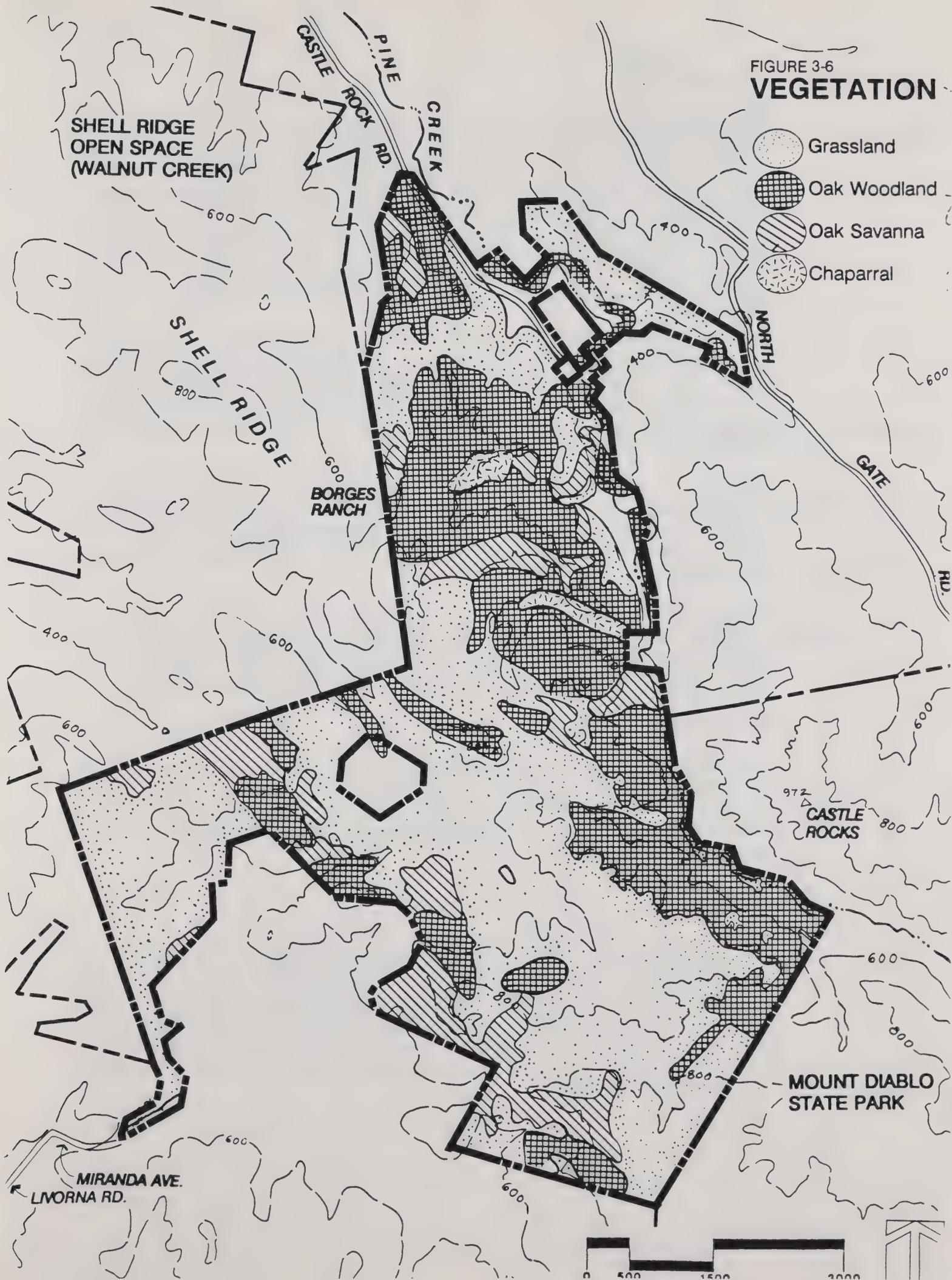
Two distinct oak woodland associations exist in the Park. The majority of the oak woodlands fall into the first category and are dominated by blue oak (*Quercus douglasii*), scattered coast live oak (*Quercus agrifolia*), and an occasional California buckeye (*Aesculus californica*). The understory vegetation is largely composed of annual grasses and wildflowers similar to those found in the annual grassland type. Very few shrubs occur other than poison oak (*Rhus trilobata*).

The second type has a greater density of tree cover and is more floristically diverse. This woodland exists along Pine Canyon and the east-facing slope above it, and contains at least 200 separate plant species, several of which are considered rare or of special interest. The canyon and adjacent slope is dominated by blue oak, and supports a considerable amount of coast live oak California bay laurel (*Umbellularia californica*), and California buckeye. Valley oak (*Quercus lobata*) and big-leaf maple (*Acer macrophyllum*) occur in the canyon bottom and on the lower slopes.

The study of hardwood tree species of the western states is relatively limited, and little is known about the development of appropriate management systems of hardwood stands. The blue oak stands in Diablo Foothills consist of generally uniformly sized trees, and appear to be even-aged. However, studies elsewhere indicate that correlation between size and age is poor, so appearances may be

FIGURE 3-6
VEGETATION

-  Grassland
-  Oak Woodland
-  Oak Savanna
-  Chaparral



deceiving. Confirming the age structure of these stands would require destructive sampling which is seen as contrary to District goals. In spite of our inability to confirm or disprove the apparent even-aged character of the stands, the same studies indicate that the predominant means of regeneration in an established stand is through resprouting following top-kill by fire, which produces a substantially even-aged stand. It is likely that on the order of 50 percent of the trees in these stands date from the most recent major fire, with most of the remainder predating that event, and a relatively small number dating for a smaller, more recent fire, or from random dates when regeneration conditions were particularly favorable.

Woody understory vegetation includes the ubiquitous poison oak, snowberry (*Symphoricarpos mollis*; *S. rivularis*), wild rose (*Rosa gymnocarpa*), blackberry (*Rubus ursinus*), and California coffeeberry (*Rhamnus californica*). Additional woody understory plants found in the canyon bottom include the blue elderberry (*Sambucus caerulea*), Christmas berry (*Heteromeles arbutifolia*), hop tree (*Ptelea crenulata*), and California grape (*Vitis californica*).

Herbaceous vegetation is diverse and includes many plants characteristic of the annual grassland type, in addition to more shade tolerant species such as the ferns, bedstraws (*Galium*), hedge-nettle (*Stachys*), sweet cicely (*Osmorhiza*), Chinese houses (*Collinsia*), larkspur (*Delphinium*), California saxifrage (*Saxifraga*), fiesta flower (*Pholistoma*), etc.

The majority of native perennial grasses found in the Park occur scattered throughout this area and include blue wildrye (*Elymus glaucus*), bluegrass (*Poa scabrella*), junegrass (*Koeleria cristata*), purple needlegrass (*Stipa pulchra*), melic (*Melica californica*; *M. imperfecta*), and California fescue (*Festuca californica*).

Oak Savanna

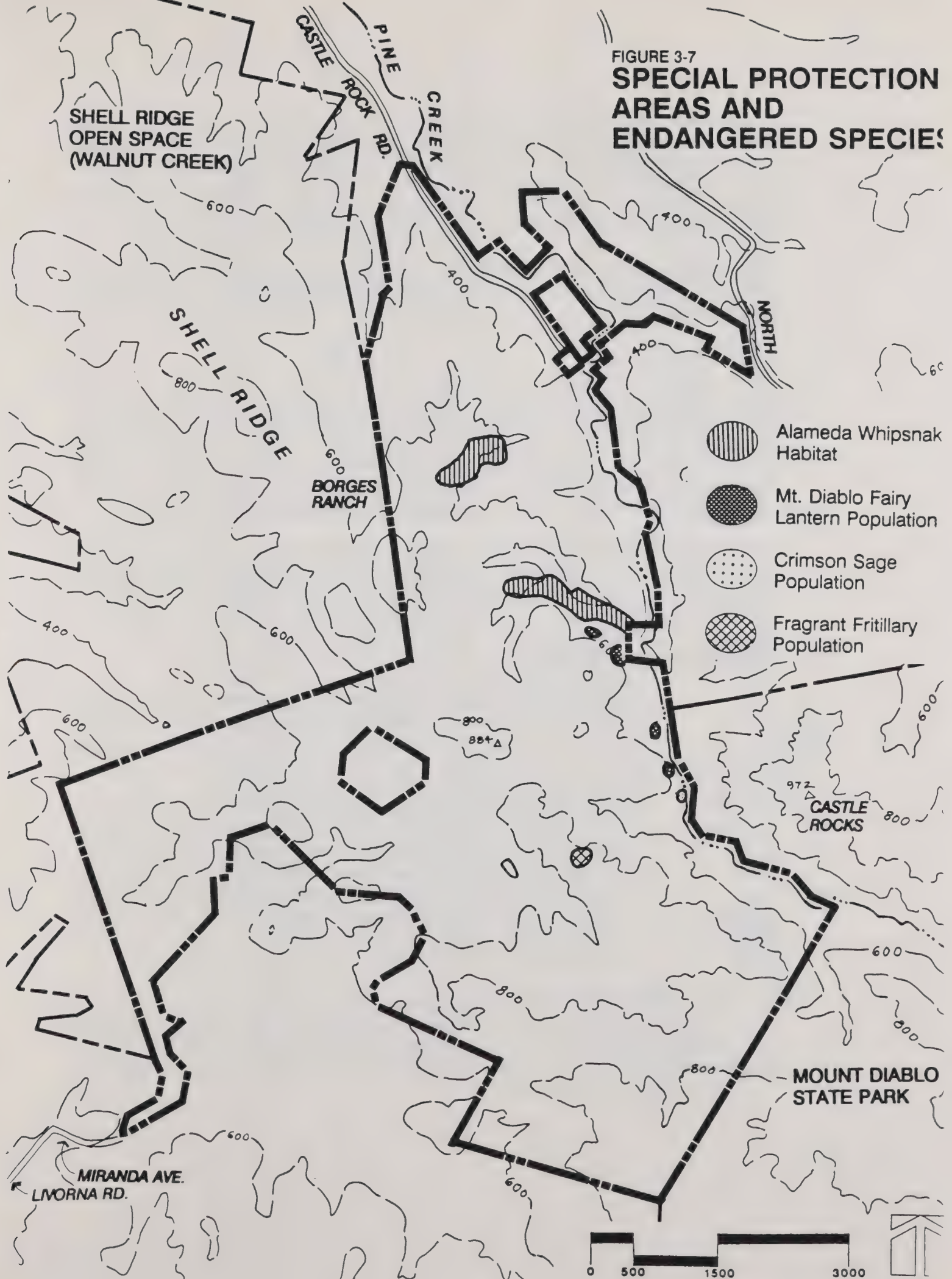
In the oak savanna vegetation type tree cover is typically less than 30 percent, or less than 50 trees per hectare. It could be thought of as a gradation between annual grassland and oak woodland. The areas designated as oak savanna support vegetation similar to that of the annual grassland and first category oak woodland types described above.

Chaparral

Brushland soils, in comparison to woodland and grassland soils, are generally shallower in depth and rockier in texture. A chaparral vegetation type occurs in two locations within the Park on soils exhibiting these characteristics. The northernmost site contains a pure stand of chamise (*Adenostoma fasciculatum*), indicating that this stand has reached a climax stage of development (Cooper, 1922). In the absence of fire or other management, this stand will become increasingly decadent (McPherson & Muller, 1969), and contribute to an increased fire hazard as standing and fallen dead material accumulate.

FIGURE 3-7

SPECIAL PROTECTION AREAS AND ENDANGERED SPECIES



The southern site exhibits a 60 percent to 30 percent ratio of chamise to black sage (*Salvia mellifera*), with the remaining ten percent comprised of California sagebrush (*Artemisia californica*) and bush monkey-flower (*Diplacus aurantiacus*). This situation indicates that some recent disturbance had occurred allowing plant species characteristic of the coastal sage scrub type to invade the site (Cooper, 1922). The resulting mix is often referred to as a coastal sage chaparral subclimax (Hanes, 1971).

The chaparral plant community is adapted to periodic fire (Shantz, 1947; Naveh, 1967, 1975), which may be a necessary environmental factor required to maintain productivity.

Riparian

Pine Creek, which flows through Pine Canyon, is an intermittent stream that is dry in the summer months. The canyon, rather than being a true riparian corridor, is characteristic of a more mesic oak woodland. However, along the canyon bottom are areas which remain moist most of the year and are considered riparian. A true riparian zone exists below Sulphur Spring near the mouth of the canyon. Springs, seeps, and pond margins within the Park support various riparian vegetation.

Plant species include various sedges (*Carex*; *Cyperus*; *Scirpus*) and rushes (*Juncus*), cattail (*Typha*), willow (*Salix*), alder (*Alnus*), rabbitfoot grass (*Polypogon*), horsetail (*Equisetum*), monkeyflower (*Mimulus*), brass buttons (*Cotula*), watercress (*Rorippa*), duckweed (*Lemna*), etc.

2. Special Status Plant Species

Several populations of rare plants occur in the Park. Three of these populations are found in woodland habitats within Pine Canyon, and the fourth is located along a grassy ridge above Pine Canyon to the west.



Fritillaria
liliacea
Lindl.

- a. **Fragrant Fritillary** (*Fritillaria liliacea* Lindl.) is on the California Native Plant Society List 1B, which implies that the plant is considered rare, threatened, or endangered in California and elsewhere. The plant, a member of the lily family, is endemic to California. Although considered rare, it is found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.

- b. **Mt. Diablo Fairy Lantern** (*Calochortus pulchellus* Dougl. ex Benth.) is a rare California endemic and one of the few members of this family with closed, nodding flowers. It is included on CNPS List 4, which is a "watch list" containing plants of limited distribution. It is widely distributed and not considered to be endangered.



Calochortus pulchellus Dougl.



Salvia spathacea Greene.

- c. **Crimson sage** (*Salvia spathacea* Greene.), a member of the mint family, occurs in two small, isolated populations in Pine Canyon. These populations constitute the northernmost occurrence of crimson sage in California and are the only populations known to exist in the East Bay.
- d. **Yerba mansa** (*Anemopsis californica* Hook.) is an otherwise common plant of wet places that was planted in the Park along Pine Creek. Its presence here distinguishes it as the northernmost occurrence of yerba mansa in California and the only known occurrence on the District. Yerba mansa is the only representative of the lizard-tail family in California.

(Information Source: California Native Plant Society, 1988)



Anemopsis californica Hook.

3. Parkland Weed Pest Species

Artichoke Thistle (*Cynara cardunculus* L.)

Occurrence and Habitat

Artichoke thistle is a robust, stoutly-spined perennial belonging to the thistle tribe (*Cynareae*), a group that comprises some of Northern California's most persistent rangeland weeds, including yellow star thistle, purple star thistle and scotch thistle. This weed grows each year from a large fleshy taproot. In late winter a large basal rosette of leaves develop which can grow up to five feet in diameter. A flowering stalk emerges in mid-summer, sometimes reaching a height of six feet and topped by several handsome blue-purple flower heads. After seed set, the entire plant dies back until fall rains begin the cycle again. This plant prefers clay soils, is shade intolerant and is readily established in disturbed grasslands.

Distribution and Abundance

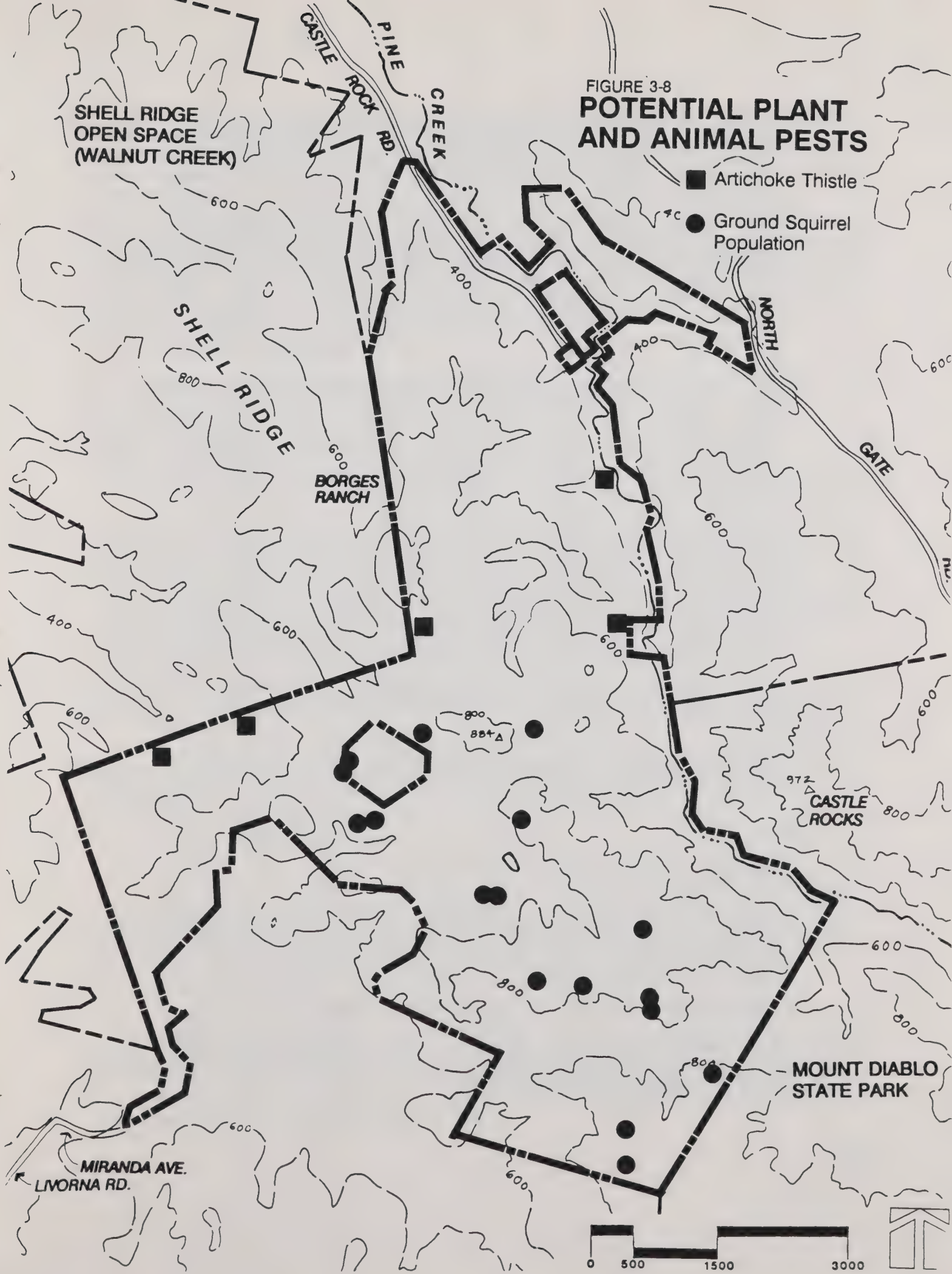
In a survey taken in early spring and in late summer of 1989 at Diablo Foothills Regional Park, scattered, small populations of artichoke thistle were found in the predominantly rolling grassland area of Shell Ridge, located in the western section of the Park. Estimated number of plants is less than seventy five. Their scattered distribution and location in gullies, along ridge tops and on steep-sided slopes suggests that this plant has been subject to control over a period of years. Established thistle populations on adjacent public and private properties follow a similar pattern as that observed in Diablo Foothills. (See Figure 3-8.)

4. Wildlife

The diverse habitat types in Diablo Foothills support an equally diverse array of wildlife populations as vegetation types. Together with the adjacent wildlands of the City of Walnut Creek's Shell Ridge Open Space and Mt. Diablo State Park, this area provides a mosaic of woodlands, brushlands and grassland habitats. The combination of these habitats supports a greater diversity of species than would be expected in extensive tracts of any one habitat type.

For example, many small rodents need the shelter of the brushlands, but feed on the seeds of the grasslands. Similarly, certain birds nest in the woodlands and feed on grassland insects. Water is available seasonally in Pine Creek and in two of the stock ponds. Permanent water is available in one of the stock ponds, in a portion of Pine Creek near the sulphur spring, and from three other springs. The land is grazed; the portion of Pine Creek near the sulphur spring is protected from the trampling of cattle, but the other water sources are not. The availability of permanent water also contributes to the diversity of species present. A listing of the wildlife of the site giving their habitat and abundance has been prepared (see Appendix C).

FIGURE 3-8
**POTENTIAL PLANT
 AND ANIMAL PESTS**



A variety of predatory birds are present -- the golden eagle, the prairie falcon and the turkey vulture nest on the Castle Rocks in the adjacent Mt. Diablo State Park. In 1989 an attempt was made to cross-foster captive-bred peregrine falcon chicks by placing them in a prairie falcon's nest on the Castle Rocks and removing the prairie falcon chicks to be raised elsewhere. If this effort is successful, the peregrine falcon may be added to the list of predatory birds which forage over Diablo Foothills. The peregrine falcon is listed as endangered under both state and federal Endangered Species Acts. Access to the Castle Rocks exists through the Diablo Foothills valley bottom. Park visitors occasionally climb the Castle Rocks. Although the State signs the Castle Rocks area during the prairie falcon breeding season, visitor use may have an impact on the prairie and peregrine falcon habitat.

There are also a number of songbirds, including morning dove, song sparrow, red-winged blackbird, northern mockingbird, scrub jay, California quail, brush tit, and brown towhee. Some birds are present in greater numbers because of human activities, including the English sparrow (because of the nearby equestrian facilities), robin (because of the irrigated turf areas) and the mallard duck (because of stock ponds).

There are a variety of mammals; however their numbers may have been affected by past rodent control practices. The mammals include: mule deer (Columbian Black Tail), coyote, grey fox, long-tail weasel, racoon, Botta pocket gopher, brush rabbit and deer mouse. The reptiles and amphibians present include western terrestrial garter snake, pacific gopher snake, western fence lizard, southern alligator lizard, Pacific treefrog, and California slender salamander. The habitat for the Alameda whipsnake is present in two localities (see Figure 3-8); a snake has been observed in the southerly locality and is presumed to be present in the other. The Alameda whipsnake is listed as threatened under the California Endangered Species Act.

There are feral pigs in portions of the adjacent Mt. Diablo State Park. There is no evidence that these animals range onto Diablo Foothills at this time. The existing habitat may be suitable and may sustain an immigratory feral pig population in the future.

Fisheries Resources

Pine Creek, which flows through the center of the Diablo Foothills canyon is intermittent, exhibiting surface flows from the first rains in December or January until as late as July or August during years exhibiting typical rainfall patterns and amounts. Flows can be expected to range from .05-.5 cfs during this surface flow period and flows of up to 20 cfs. can be expected during storm events.

No fish species were found to inhabit Pine Creek. This situation is a result of Pine Creek's intermittent nature and apparent lack of pools of sufficient depth and volume for summer and fall survival.

Pine Creek does provide necessary seasonal habitat for reproduction and growth of the California newt (*Taricha granulosa*) and the Pacific Tree Frog (*Hyla regilla*) as well as providing water for a host of reptiles, mammals and birds inhabiting the canyon.

A surge dam built on the creek in 1955 controls storm flows from adversely impacting downstream structures. The dam itself is earthen in construction and incorporates a concrete spillway. If this structure were examined and found to be sound, water could be impounded behind the dam creating a suitable environment for a variety of fish, bird and plant species not currently found in the park.

5. Potential Pest Species

California Ground Squirrel (*Spermophilus beecheyi*)

Occurrence and Habitat

California ground squirrel (*Spermophilus beecheyi*) is a native rodent and is widely distributed throughout California. Ground squirrels, like most rodents, are capable of rapid population growth under favorable circumstances and the high population levels that result can cause erosion, higher weed populations and increased risk in the transmission of several serious human diseases (Salmon, Gorenzel 1981). In park use areas, damage to facilities (campgrounds and roads) and structures can also occur. In park rangeland these burrowing activities can be quite destructive. Burrowing and resultant bare earth around colonies may cause rough pasture surfaces and slow grass regeneration (Salmon, Licklitter 1984).

The preferred habitat of ground squirrels in rangelands around Mount Diablo seems to be grassland with rock outcrops and open woodland understory (Bartolome, Brownfield 1988). California ground squirrels feed on a variety of plant materials, including herbs, seeds, nuts, bulbs and fruits. They have been reported as feeding on rangeland filaree, tarweed, lupine, various forbes, grasses and grass seed (Storer 1958).

Ground squirrels live in colonies of two to twenty or more animals (Salmon, Licklitter 1984). They have an elaborate social structure. Visibility of other individuals is essential to establish and maintain the social structure (Owings personal communication 1987). In addition, this species has a predator alert system, whereby they utilize posts, rocks and high points to watch for predators and with a series of calls warn other ground squirrels in the area of danger (Owings 1987). Breeding season is January through March (Salmon, Licklitter 1984).

Ground squirrels are preyed upon by foxes, coyotes, badgers, bobcats, prairie falcons, golden eagles, barn owls, great horned owls, rattlesnakes and gopher snakes (Storer 1958). They are a food source for a variety of wildlife species such as raptorial birds, fox, and other carnivores depend on this species. Ground squirrels are not only a food source for many predators, but their burrow system can provide fox and coyote dens and nest sites for burrowing owls.

Distribution and Abundance

A survey was conducted in the spring and late summer of 1989 at Diablo Foothills Regional Park to determine the distribution of ground squirrels (see Figure 3-8). Surveys were conducted by driving or hiking roads, fire roads and trails.

When a colony was located, the perimeter was hiked to determine the extent of the colony. The colonies, located in both developed and undeveloped areas of the park, were then mapped as shown.

The largest active concentration of squirrels is in the Castle Rock picnic and recreation area. Squirrel colonies are extensive and numerous in the Walnut Creek Open Space property adjoining the western park boundary at the junction of Briones/Mt. Diablo trail. Three burrow openings from this colony occur on park property. In addition, extensive squirrel activity was observed on the private property adjacent to the most eastern boundary at Castle Rock Park.

Yellowjackets (*Hymenoptera*: *Vespidae*, *Paravespula* spp.)

Occurrence and habitat

In the Bay Area two species of ground nesting Vespid wasps, *Paravespula pensylvanica* (Saussure) and *Paravespula vulgaris*, (L.) are the most common. *Paravespula pensylvanica* is found in dry grassland and oak woodland habitats. *Paravespula vulgaris* tends to occur in the oak-madrone woodland of northern California. Ground nesting yellowjacket populations steadily increase beginning in June and peak during August and September. Reproductive males and queens appear in October. Yellowjackets become a nuisance during late summer and early fall when most of their natural food sources are drastically depleted. The large numbers of foraging yellowjackets observed during summer drop abruptly with fall temperatures. Only the mated queen survives the cool winter, and she establishes a new colony after the spring rains cease.

Yellowjackets are present in few or large numbers every year, but periodic population outbreaks associated with a warm, dry spring occur every five to six years, creating a severe problem for people in recreation-associated activities.

Colony size of yellowjackets vary, but it is not uncommon for a nest to contain 8,000 to 10,000 immature and adult wasps.

Distribution and Abundance

Paravespula pensylvanica, the western yellowjacket, is the most prevalent pest yellowjacket in Diablo Foothills Regional Park (Twomey, 1964). It favors dry grassland-oak woodland habitats typical of this regional park. Foragers are present from June to November. Nest locations found in this area were situated along roadsides, creekbanks and in root cavities beneath oak trees in the Pine Canyon

area. The recreational activities provided at Castle Rock Park tend to attract a scavenger species like the western yellowjacket. This persistent intruder searches out meat or other protein-rich or sugary food, such as those that might be served at a picnic or provided by a concessionaire stand. As the colony size increases the yellowjackets become more accustomed to foraging around developed picnic areas. Akre (1975) indicates 80 percent of the yellowjacket workers forage within 1,100 feet of the nest. In 1963 and again in 1964, Castle Rock Park closed its facilities for a two-week period because of the severity of the yellowjacket problem (Twomey 1964).

6. Species of Special Interest

Invertebrates of special interest were those identified by the California Department of Fish and Game -- Natural Diversity Data Base (NDDB) in their inventories for the Diablo, Antioch quads. They are Federal or State listed as endangered, rare, or threatened or are considered endangered, rare or threatened because of geographically disjunct habitat or habitat loss due to urbanization.

Bay Checkerspot Butterfly (*Nymphaledae*. *Euphydrus editha bayensis*).

Occurrence and Habitat

Euphydrus editha bayensis is a medium-sized butterfly distinguished by black bands along the veins on the upper wing surface, which is sharply contrasted with bright red and yellow spots giving the insect's wing a decidedly checkered appearance.

The bay checkerspot is listed as a Federally "threatened" species as of September 1987 (Chris Nagano 1989).

The bay checkerspot flies in early spring (March-May), laying egg masses at or near the base of plantain (*Plantago erecta*) the primary host plant. Larvae will also feed on Owls Clover (*Orthopaupus densiflora*) if plantain is not readily available. The eggs hatch in about two weeks and the larvae feed for three weeks before becoming quiescent (Singer 1972). The larva begin feeding again in late December or January and complete their development.

Adults feed on *Lasthenia chrysostoma* (gold fields), *Layia platyglossa* (tidy tips) and *Linathus androsaceus*. A 1989 late spring survey of the vegetative composition of the grasslands of Diablo Foothills Regional Park revealed a somewhat patchy distribution of the requisite larvae and adult host plants. This suggests that the critical habitat requirements necessary to support a population or colony are not present.

Distribution

Historically the bay checkerspot ranged east, west and south of San Francisco Bay in five counties. Currently twelve of the sixteen known colonies are extinct and two

sites are of uncertain status (Murphy, Weiss 1988). The closest sighting in recent years at Diablo Foothills was made by Tom Davies, California Academy of Sciences in the 1960s. This record is that of an extinct satellite colony 25-30 miles north and east of Mount Diablo (Morgan Territory Road site near Antioch 1977) by the California Department of Fish and Game -- Natural Diversity Data Base (NDDDB).

Lepidopterists at the University of California, Berkeley (Jerry Powell), Stanford University (Dennis Murphy), and California Academy of Science (Tom Davies) concurred it would be highly unlikely to find the bay checkerspot on the west side of Mount Diablo and specifically the grassland environs of Diablo Foothills. Collectively they state that *E.e. bayensis* is restricted to grasslands on outcrops of serpentine soil which can support abundant growth of the butterflies' two-larval food plants. The presence of both food plants in close proximity is evidently required for successful completion of the life cycle. (Singer 1972).

Murphy (1989) indicates habitat patches containing this mixture of food plants are typically formed in association with outcrops of serpentine soils. He suggests further that the nutrient-poor quality and physical structure (low water retention capabilities) favor the host plants over the more prevalent introduced grasses and forbs.

A review of the geologic map of the Diablo quad indicates serpentine formations do not occur at Diablo Foothills Regional Park (1980), and, therefore, it is not likely that the bay checkerspot habitat occurs in Diablo Foothills.

Harvestmen (*Arachnida: Phalangida: Calicina (=Sitalcina) serpentina* Briggs and Ham).

Occurrence and Habitat

Harvestmen are easily recognized by their oval compact body and extremely slender legs. Ubrick and Briggs (1989) describe this Phalangid as a species that occurs under rocks in conditions of high humidity and associated principally with serpentine and on occasion sandstone rock formations located in oak woodland and grassland biomes.

Distribution and Abundance

Ubrick and Briggs (1989) state that *C. serpentina* is not rare in the Bay Area and is known from Santa Clara and San Benito Counties in the south to San Mateo and Contra Costa Counties in the north. They suggest that an intensive collection effort would provide a needed distribution profile. The authors remark as development continues habitat specific to this species is being lost, which could further reduce distribution of this species. The California Department of Fish and Game and Natural Diversity Data Base (NDDDB) considers this species of harvestmen as a special animal (SA) and has assigned it an inventory priority of A1.2. This rating implies the species is biologically rare and restricted in distribution. The NDDDB distribution records do not site locations in Diablo Foothills.

Many terrestrial invertebrate species are closely associated with a particular microhabitat. A review of a geologic map of the Clayton Quadrangle (1980) indicates the preferred serpentine formations are not found in Diablo Foothills Regional Park. However, sandstone formations in the Park may serve as habitat to the Harvestmen.

7. Resource Issues

Vegetation

- Management of annual grassland sites is needed to prevent limitations on plant diversity and wildfire hazards.
- Consideration should be given to the development of land use and management strategies for:
 - The retention and enhancement of sensitive plant populations.
 - The protection of riparian habitat.

Parkland Weed Pest Species

- Control of non-native plant species, such as artichoke thistle, may be necessary where established stands in gullies, along ridge tops and steep slopes impact the resource uses of these grasslands.

Wildlife

- Riparian and chaparral plant communities provide important habitat for many wildlife species and should be protected from adverse impacts.
- Consideration should be given to protection measures for the prairie and peregrine falcon habitat on the Castle Rocks.

Potential Pest Species

- The potential resource impacts of ground squirrel populations in Diablo Foothills Regional Park are:
 - Health and safety risks to the public and park staff from ground squirrel activity.
 - Impacts on natural resources from unnaturally high ground squirrel population levels.
 - Impacts on park facilities from ground squirrel activities.

- Continued development of Diablo Foothills Regional Park could increase the problematic human encounters with yellowjackets.

Species of Special Interest

- The sandstone formation in the oak woodland along Pine Canyon needs to be evaluated to determine whether it is suitable habitat for the harvestman.

E. Climate and Air Quality

1. Climate

The Bay Area generally, and Diablo Foothills specifically, are characterized by a Mediterranean climate. This is a well defined climate pattern dominated by maritime influences, particularly offshore high pressure areas which produce cool, moist, generally westerly winds over the land. At the coast temperatures show little variation due to the stabilizing influence of the ocean; variations become greater as distance from the shoreline increases. At Diablo Foothills, mean annual air temperature is approximately 60°F, ranging in the winter from 20°F to nearly 80°F, and in the summers from 45°F to over 100°F. Periods of high temperature (late summer) occur when high pressure develops over the Great Basin, and overpowers the offshore influence; such periods are characterized by winds out of the east. Hourly wind observations made at Concord during the period from 1951-1953 show the following distribution of wind directions:

From western quadrants, including N & S --	61% of observations
From eastern quadrants, excluding N & S --	6.5% of observations
Calm	-- 32.5% of observations

Since observations of "calm" usually represent periods during a day, rather than the character of the whole day, the proportions of days with maritime winds and of days with easterly winds can be estimated as follows:

$$\text{Maritime days } \frac{61}{61+6.5} \approx 90\% = 330 \text{ days}$$

$$\text{East-Wind days } \frac{6.5}{61+6.5} \approx 10\% = 35 \text{ days}$$

Thus, temperatures exceeding 100°F can be expected about 30 to 40 days/year.

In addition to bringing (or permitting) high temperatures, easterly winds replace the moist maritime air with arid desert air, creating a drying trend; when east-wind velocities are high, serious desiccation of vegetation occurs. This condition is generally experienced on a Bay Area-wide basis, three to ten days/year.

Mean annual precipitation of Diablo Foothills is approximately 22 inches/year, most (90 percent $\pm$) of which occurs as rainfall between November and April. Of the remainder, some may occur as late spring rainfall, and some as mid-summer fog. Although snowfall occasionally occurs at the higher elevations of Mt. Diablo, it is not to be expected at Diablo Foothills. Almost no precipitation occurs from late July through September.

Within the Park, topography influences the temperature regime. Because a significant portion of available solar energy is consumed in warming and drying the atmosphere early in the day, areas which receive their direct insolation during this period do not achieve temperatures as high as those areas which receive their direct insolation later on in the day. Thus, slopes which face northward (and are always somewhat topographically shaded) or eastward (which are topographically shaded later in the day) generally have lower peak temperatures than slopes which face southward or westward. Diablo Foothills can be broadly described as a single ridge (Shell Ridge) trending north-south. The ridge top (along the Briones-Mt. Diablo Trail) and south-western portion of the Park receive direct afternoon insolation, and can be expected to be as much as 10°F warmer during the summer than the eastwardly oriented face of the ridge (which comprises the west side of the Pine Creek drainage). This relationship is reflected in the site vegetation, which is almost exclusively grassland on the west, and dense oak woodland on the east.

Locally, rainfall is caused by cooling of a moist air mass as it raises in elevation while passing over a ridge. Under a regime dominated by westerly winds during the wet season, moisture is effectively wrung out of the air as it crosses successively higher ridges in its eastward movement; low lying areas east of a significant ridge are said to lie in the "rain-shadow" of that ridge. "Local," however, is a relative term: In the East Bay Area, the ridge complex west of I-680 freeway proves to be the governing factor; even Mt. Diablo, which reaches well above the more western ridges, does not experience locally higher precipitation. Shell Ridge, being generally under 1,000 foot elevation within Diablo Foothills, does not measurably influence rainfall. Precipitation which is initiated by the ridge system to the west generally tapers off as the air mass moves eastward, and this trend can be expected to produce higher precipitation levels on the west edge of the Park than on the east, regardless of elevation.

2. Air Quality

Air quality is monitored and regulated, under state and federal law, by the Bay Area Air Quality Management District (BAAQMD). Concentrations of ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) and suspended particulates are measured at 23 locations throughout the nine-county Bay Area. Concord is the measurement station closest to Diablo Foothills. For the year 1988, Concord station exceeded neither the federal, nor the more restrictive state standard for CO, NO_2 , or SO_2 . The federal standard for O_3 was exceeded one time; the state standard ten times. The federal standard for particulates was not exceeded; the state standard was exceeded ten times. The measurement station is

approximately four miles northwest of Diablo Foothills, and should be reasonably representative of air quality in the Park.

When the concentration of any pollutant exceeds predetermined levels, BAAQMD may declare an "Alert," a "Warning," or an "Emergency" condition. Since this program was installed in 1974, a number of ozone Alerts have been called District wide; Alerts have not been required for other pollutants, and Warnings and Emergencies have never been required. An Alert is intended as a notification to people with known conditions (generally respiratory) which may be affected by diminished air quality, and when an Alert is declared, pertinent information is put on a hot line recording, and disseminated to news media. Persons of reasonable health need not be directly concerned with an Alert condition.

Ozone is a photo chemical pollutant, so-called because it forms in the atmosphere from other organic materials under the influence of heat and sunlight. Conditions favoring creation of ozone generally occur during late summer and fall. Ozone conditions are significantly worse in those inland and southern urban areas where high temperatures and unblocked sunlight are more prevalent than around San Francisco Bay. The most severe conditions are created on low wind days when limited air movement permits ozone to accumulate. The most significant source of chemicals from which ozone is produced is motor vehicle exhaust. Although exhaust emission controls are favorably limiting the precursors of ozone, increased traffic in the vicinity could result in increased ozone concentrations at Diablo Foothills.

3. Resource Issues

- Low seasonal precipitation and desiccating east winds combine to create hazardous fire conditions which could affect park use in the late summer and fall.
- Road or trail use during the wet winter season damages surfaces and may cause erosive conditions.
- Air quality is not currently limiting to the use of Diablo Foothills; however, increased development and the attendant motor vehicle traffic may degrade air quality in the future.



IV. CULTURAL RESOURCES INVENTORY

A. Archaeological Resources

1. Historical Resources

Native American

Diablo Foothills is situated in the ethnographic territory of the Bay Miwok. Bay Miwok territory extended through eastern Contra Costa County to the Sacramento - San Joaquin Delta. The aboriginal Bay Miwok population was estimated at 1,700. The five tribelets, or individual political groups, that comprised this population were the Saclan, Volvon, Chupcan, Julpun and Tatcan (Levy, 1978). The Park appears to be in the ethnographic province of the Tatcan, possibly at some point also occupied by the Volvon (Milliken, 1979 and 1982). Each of the tribelets possessed a small territory, usually defined by a drainage system. Each group acted as a homogeneous unit in matters of land ownership, trespass, war and major ceremonies (Kroeber, 1932). (See Figure 4-1.)

Within each tribelet were several more or less permanent settlements, with a larger number of seasonally occupied campsites used at various times during the seasonal round of hunting, fishing and gathering activities (Levy, 1978). The aboriginal way of life was centered upon seasonal procurement of animal and vegetal resources available within restricted micro-environments. In settings where a variety of resources were available throughout the year, the people were more sedentary than in settings where the resources were more dispersed.

Important plant foods included the acorn, buckeye, California laurel, grass seeds and broadiae, all of which were available within the parkland. Important game species included deer, jackrabbits, cotton-tail rabbits and tule elk. Along the Sacramento-San Joaquin Delta, salmon and other fish played a significant role in the Miwok subsistence economy (Levy, 1978).

Mt. Diablo played an important role in Miwok mythology, being the focal point of a Miwok creation myth (Kroeber, 1932). Many of the Native American sites recorded in Mt. Diablo State Park are assumed to be of ceremonial importance.

In the late 18th and early 19th centuries, the Bay Miwok were forced into missions and in 1833 a devastating epidemic severely decimated the population. The neighboring Plains Miwok, and perhaps the Bay Miwok as well, eventually learned warfare tactics from the Spanish, which led to active resistance and raiding against the Mexican settlements. Warfare and later Euroamerican settlements, which infringed upon the hunting and gathering areas of the remaining Miwok, took a further toll on their population. The cultural integrity of these people was essentially destroyed by the Mid-1800's, although some descendants remain to this day.

Evidence of Native American use within Diablo Foothills includes a seasonal habitation site, probably associated with both hunting and tool manufacture. Additional archaeological research currently underway may result in the discovery of additional resources, potentially including bedrock milling stations, petroglyphs, hunting blinds and camps.

Euroamerican

The historic period in Contra Costa County began with the 1772 expedition of Pedro Fages and Juan Crespi to the Mt. Diablo area followed by the 1776 expedition of Juan Bautista de Anza and Father Pedro Font across Contra Costa County to the confluence of the Sacramento and San Joaquin Rivers.

In 1834, Dona Juana Sanchez de Pacheco petitioned Governor Figueroa for two square leagues of land which included the "Sierra de Golgonas" and the land west of them. This rancho, known as the Arroyo de las Nueces y Bolbones (creek of the nuts and Bolbones) was confirmed to Dona Sanchez's heirs in 1853, and contained 17,782 acres. In the 1850's, James Walker bought 1,400 acres of the Rancho. His uncle, Joseph Walker, was the explorer, trapper and guide for whom Walker Pass was named. The James Walker home is located near the study area and is listed in the California Inventory of Historic Resources. Walker Canyon, located one-quarter mile north of the project area, was undoubtedly also named for this family.

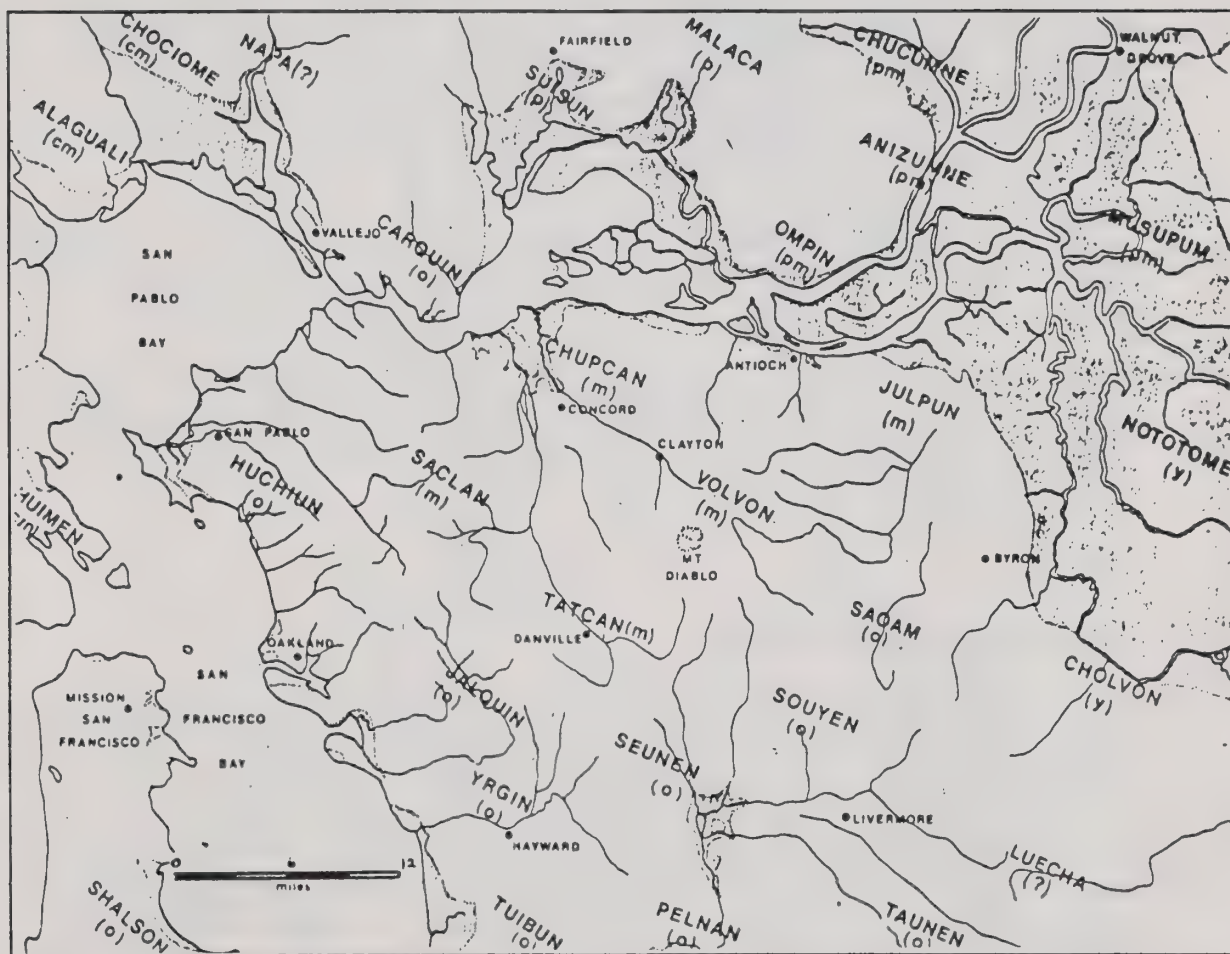
Since rancho times, the study area has been used for cattle grazing, for dairying and beef production. The Ford family has held much of the property since the early 1900's and have grazed the property to this day. The Ford family operated the Castle Rock Dairy here from c. 1902 to 1940 when it was sold to Pioneer Dairy (Ford personal communication 1989). The property has also been used for hay production and includes a walnut orchard which was actively managed from c. 1902 to 1982. A walnut hulling machine was brought onto the property in c. 1938-1939 to meet the increasing demands of walnut production. The huller remains today, although only a portion of it lies within the study area. Remnants of former fencing, roads, ponds and miscellaneous old farm equipment occur throughout the study area.

2. Resource Issue

- Archaeological resources must be evaluated for protection, restoration and public interpretation.

FIGURE 4-1

INDIAN TRIBES AROUND MT. DIABLO



The map shows tentative location of Indian tribes within a 30-mile radius of Mt. Diablo at the beginning of the 19th Century. Letters in parentheses indicate tribal languages affiliation (cm - Coast Miwok, m - Bay Miwok, pm - Plains Miwok, o - Ohlone, p - Patwin, y - Yokuts). Central points of some modern cities added for reference.

Source:
Contra Costa Times
Sunday, March 11, 1984

B. Access, Circulation, and Transportation

1. Existing Roadways

Diablo Foothills Regional Park is located at the end of Castle Rock Road, a two-lane county maintained public road serving the northeastern portion of the Park near Walnut Creek. Regional access to the Park is provided by Interstate 680, a major four-lane north-south freeway which makes this area accessible from cities in the East Bay and from the rapidly urbanizing valleys of Contra Costa County. Local exits are at Ygnacio Valley Boulevard off of I-680 N and Livorna Road from I-680 S. Livorna Road East provides vehicle access to the Diablo Foothills from the Alamo area. Livorna Road East is a two-lane east-west roadway connecting I-680 with the Stonegate Subdivision. (See Figure 4-2.)

Service and emergency vehicle access to the west end of the Park is available at three locations through the Stonegate Subdivision. Figure 4-2 shows these existing access routes.

Castle Rock Road also serves residences located along the route to the main entrance of the Park. Traffic generated by park visitors to Castle Rock Recreation Area travels through residential areas presenting a potential conflict between park neighbors and park users.

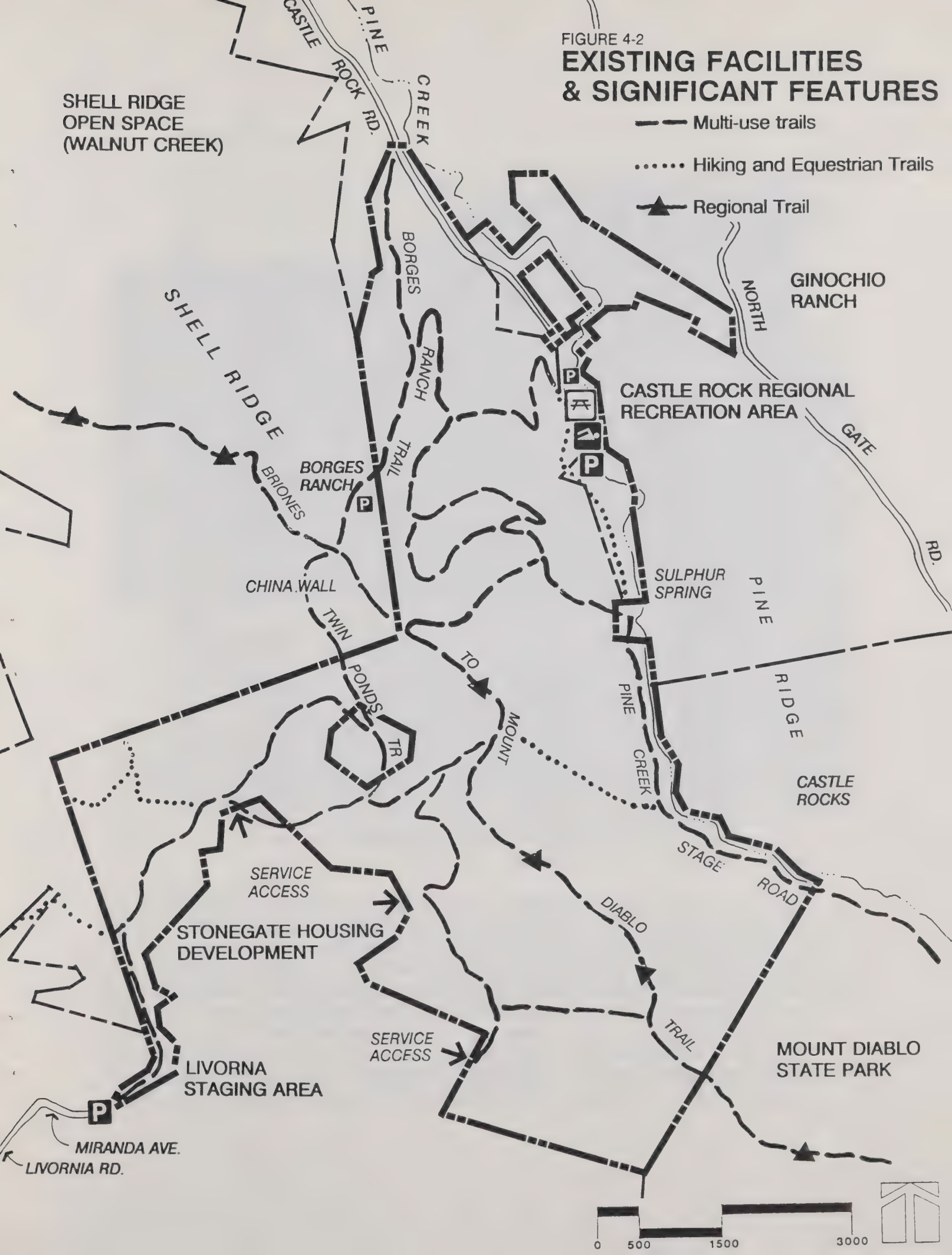
2. Parking

Castle Rock Recreation Area

The concessionaire at Castle Rock Recreation Area provides approximately 400 parking spaces to serve visitors to these reservation only facilities. This parking lot also provides direct access to Pine Canyon and ridge trail connections for visitors to the Castle Rock facilities. Between 300 and 350 vehicles are parked in a large unpaved meadow between the picnic areas, and the entrance to Pine Canyon slightly west of Pine Creek. During the dry summer months, this parking area becomes very dusty covering nearby facilities and trees with dust. In winter months, runoff from this large parking area flows into Pine Creek. An estimated 60 vehicles are also parked diagonally in the meadow besides Eddybrook Picnic site, along Pine Creek Road across from the facilities, and in the area behind the kiosk. When reserve groups exceed 1,400 at Castle Rock, overflow parking outside of the recreation area is available at the Northgate High School. The concessionaire reserves the overflow parking lots (accommodating up to 600 cars) through the high school and rents two buses which shuttle park visitors between Castle Rock and the parking lots at 15-minute intervals. The on-site parking capacity of Castle Rock Recreation Area is only exceeded approximately two to three times per year. (See Figure 4-2.)

FIGURE 4-2

EXISTING FACILITIES & SIGNIFICANT FEATURES





Castle Rock Recreation Area parking lot

Diablo Foothills Regional Park

An undeveloped, informal parking area is located at the end of Castle Rock Road between the two entrance gates into Diablo Foothills Regional Park and Castle Rock Recreation Area. This roadside parking area provides space for ten to twelve vehicles and is used by park visitors who hike and ride on the trails in Diablo Foothills. This interim use public parking area is available to park visitors who are not part of the Castle Rock reservable picnic groups, but who wish to hike or ride horses into Pine Canyon and Diablo Foothills.

Currently this is the only EBRPD public access into Diablo Foothills from the Walnut Creek area. The large parking area inside of the Castle Rock Recreation Area is not available for general public use. This limited roadside parking space is not signed as a staging area and reflects the confusing, restricted public status of Diablo Foothills Regional Park. This parking area meets the immediate interim needs of providing limited public access to Diablo Foothills but is insufficient in the provision of long-term public vehicle and equestrian trailer access. This small staging area serves a steep, narrow hiking/riding bypass trail which goes around the Castle Rock Recreation Area. A conflict exists between the availability of parking for concessionaire use of Diablo Foothills and the limited public access to the Park.

Stonegate Subdivision

A public staging area at the end of Livorna Road East provides access to the southwest side of Diablo Foothills from the Alamo vicinity. Six vehicle and six equestrian parking spaces are provided at this landscaped entrance to the Stonegate subdivision. This parking lot accommodates visitors to both Diablo Foothills and the City of Walnut Creek's Shell Ridge Recreation Area. This staging area is currently not signed as a public entrance to the Park.



Stonegate Subdivision Staging Area

Other Local Access

Within Walnut Creek's Shell Ridge is the Borges Ranch, immediately adjacent to the northwest boundary of Diablo Foothills. This established parking, picnicking and interpretive facility serves hikers and equestrians of both Shell Ridge and Diablo Foothills. Borges Ranch is the Shell Ridge park headquarters, also a major trailhead, connecting to the Briones to Mt. Diablo Trail, and a popular point of entry into Diablo Foothills.

Additionally, several privately owned stables located off of Livorna Road provide equestrian access into Diablo Foothills.

3. Trails

Circulation routes within Diablo Foothills consist primarily of existing graded service roads. (See Figure 4-2.) The location of these routes has largely been determined by topography, with ridgecrests being the main interior circulation routes. Three trails retain historic names: Pine Creek Staging Road, Briones to Mt. Diablo Trail, and Borges Ranch Trail. The remaining trails are not named. There are no signs marking the Diablo Foothills trail system except along the Briones to Mt. Diablo Trail.



Briones to Mt. Diablo Trail; Las Trampas on Horizon

All of the existing trails except two are suitable for multipurpose recreational use, hiking, riding, and bicycling. One is a hiking/equestrian bypass trail around Castle Rock Park into Pine Canyon which cannot be used by visitors with disabilities or bicyclists. The other is a steep, narrow gauge, east-west transect connecting Pine Creek Stage Road from the bottom of Pine Canyon to the Briones to Mt. Diablo Trail along Shell Ridge. The Briones-Mt. Diablo Trail is part of a major regional trail system in Contra Costa County. It follows the Mokelumne Aqueduct right-of-way from Briones Regional Park, turns east along the Contra Costa Canal, passes through Heather Farms Park, and enters Shell Ridge and Diablo Foothills at the end of Marshall Drive in Walnut Creek. Borges Ranch Trail and Twin Ponds Trail also link the open spaces of Diablo Foothills and Shell Ridge. Pine Creek Stage Road,

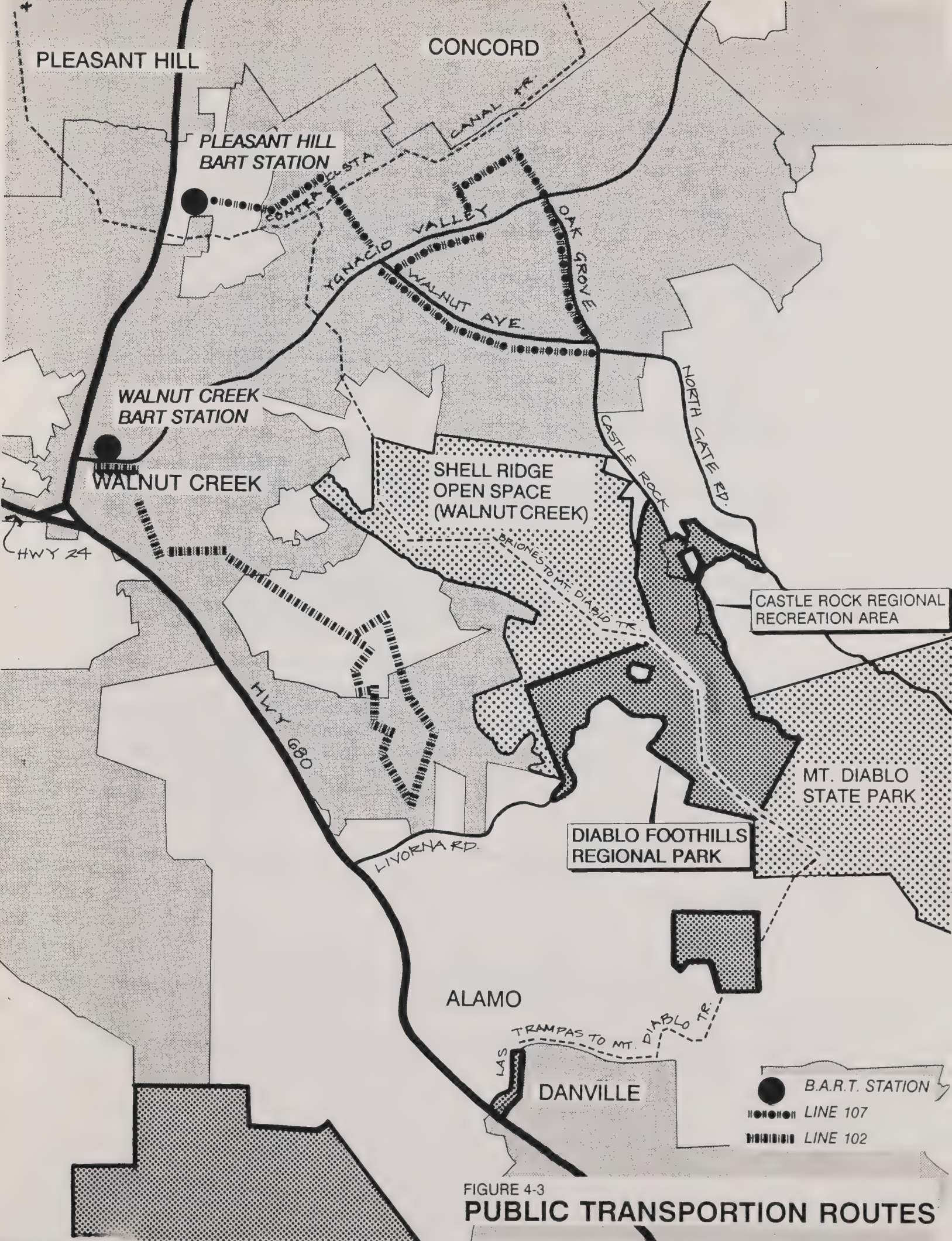


FIGURE 4-3
PUBLIC TRANSPORTATION ROUTES

an old coach road, winds to the summit of Mt. Diablo linking the shady oak groves of Pine Canyon to the steep slopes of Mt. Diablo scattered with digger pines. Three internal ridge trails and two canyon trails are unnamed. A hiking/riding bypass trail was constructed when EBRPD acquired Castle Rock to minimize conflicts between groups using the reservable facilities and individuals entering the Park to hike or ride. At present, there is no disabled access to trails in Diablo Foothills.

Equestrian use of Diablo Foothills' trails is a popular, historic use of the Park. Equestrian staging to trails in the Park exists at the Walnut Creek Open Space Borges Ranch and the new Livorna Road staging area. There are no equestrian facilities serving the Castle Rock Road entrance to the Park. Equestrians ride along Castle Rock Road from nearby residences or local stables into Diablo Foothills and encounter vehicle traffic from Castle Rock Recreation Area on high use days.

4. Public Transportation

The Central Contra Costa Transit Authority serves the public transportation needs of the cities and towns surrounding Diablo Foothills Regional Park. "The County Connection" provides bus service between BART stations and intersections along major thoroughfares.

In the Walnut Creek area, bus #107 leaves the Pleasant Hill BART station travelling along Treat Boulevard, Bancroft Road towards the intersection of Walnut Avenue and Oak Grove Road. At three and one half miles from the entrance to Castle Rock Recreation Area, it is the closest bus stop to the northeastern entrance of the Park.

Bus #102 departs from the Walnut Creek BART station and stops at the intersection of Mt. View Road and San Miguel Drive. Trail connections from the staging area at the end of Mt. View Road can be made to the Briones-Mt. Diablo Trail leading from Shell Ridge Recreation Area into Diablo Foothills Regional Park. Bus #102 also stops at Trotter Way and Bridle Lane, an intersection approximately two and one half miles from the Livorna Road staging area to Diablo Foothills. (See Figure 4-3.)

There is no direct public transportation access to Diablo Foothill staging areas.

5. Resource Issues

Staging Issues

- Runoff from the existing parking area for Castle Rock Recreation Area may have a deleterious effect on Pine Creek.
- There is insufficient poorly signed public staging for Diablo Foothills Regional Park.

- There is insufficient equestrian staging to Diablo Foothills Regional Park.
- Large reserve group use of Castle Rock (1,500+) exceeds existing parking capacity.
- The unpaved surface of the existing Castle Rock Recreation Area becomes extremely dusty in dry months.
- There is inadequate disabled and public transportation access into Diablo Foothills.

Roads and Trails Issues

- Existing trails need to be signed and several need to be named.
- There is concern that equestrian use of the Park in wet weather damages trails.
- Park user conflicts arise when equestrians riding into Diablo Foothills along Castle Rock Road encounter vehicles entering and leaving Castle Rock Recreation Area on high use days.
- The Livorna Road staging area needs to be signed as a public EBRPD access and the trail from the staging area link to Diablo Foothills needs to be constructed.
- The Walnut Creek entrance to Diablo Foothills/Castle Rock Recreation Area is confusing to visitors seeking parking areas, facilities and trailheads.
- Potential noise and traffic conflicts exist between park neighbors and park visitors

C. Recreation Facilities and Usage

1. Facilities

Diablo Foothills Regional Park has not been formally open for public use since the EBRPD acquired portions of the site in 1976 and 1985. No permanent recreation facilities have been constructed in the Park. However, D & F Pack Station, an inholding of Diablo Foothills Regional Park located on Castle Rock Road, offers guided horseback rides on the trails of Diablo Foothills and Mt. Diablo State Park for two, four, or eight hour trips, seven days a week. Castle Rock Recreation Area has provided active recreation for Central Contra Costa County for three decades.

The facilities within the Castle Rock Recreation Area are currently only accessible by reservation through "The Picnic People", a concessionaire. General public access to park facilities has been limited to trail use.

The District and the concessionaire have delayed the renovation of existing facilities and the addition of new facilities pending the completion of the Land Use-Development Plan for Diablo Foothills. Other planning and operations decisions have also been postponed until a final determination has been made regarding the use of Castle Rock Recreation Area as a drop-in public facility or a reservations only facility.

At present, the location of the large parking area which serves Castle Rock Recreation Area conflicts with the surrounding park use of picnic areas and gamefields. Once the park use of Castle Rock Recreation Area is decided, parking areas can be relocated and redesigned. Additionally, a permanent security residence could be considered to replace the temporary (October-May) trailer used to house the caretaker of Castle Rock facilities.

Castle Rock Recreation Area

Castle Rock Recreation Area is a 15-acre park that can accommodate groups of 75 - 3,000 people. Castle Rock offered picnicking, swimming, field games, and other activities under private ownership and operation until 1985 when the District acquired the facility. EBRPD is currently leasing the facility to "The Picnic People", a concessionaire, to operate as a reserve group facility. Castle Rock Recreation Area is currently open for reservations from May through October.

The policy of The Picnic People company is to provide a controlled (reservations only), supervised, group picnic experience. Patrons reserve a picnic site well in advance of their event date and receive tickets and an activity schedule outlining the time and locations of specific sports and entertainments. Only ticketed visitors are permitted to enter the gated kiosk.

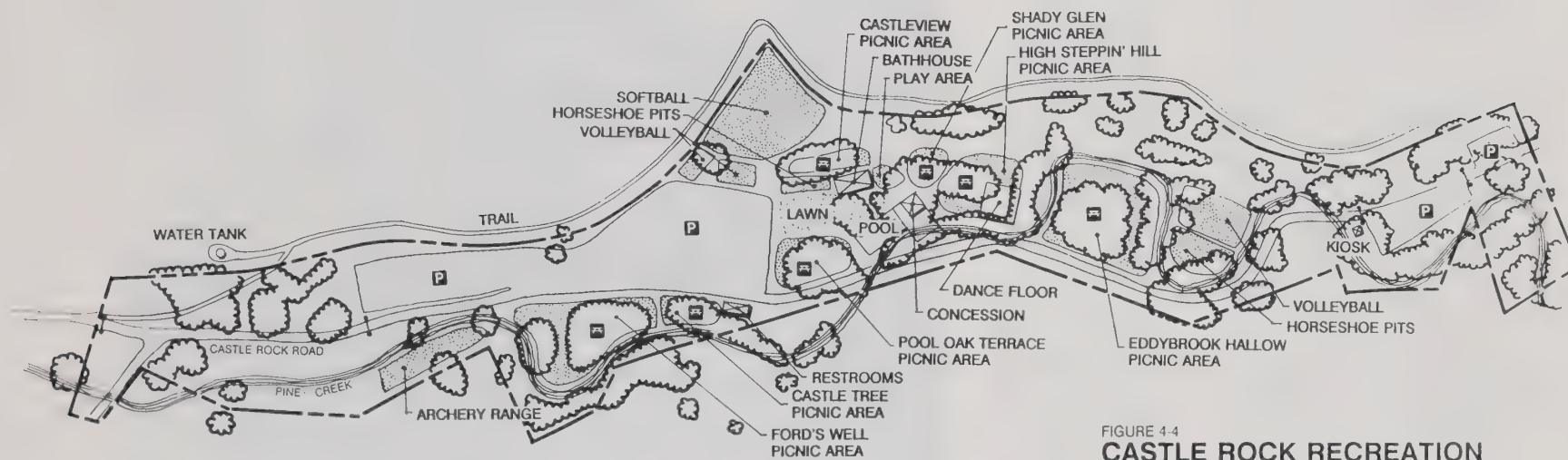


FIGURE 4-4
**CASTLE ROCK RECREATION
 AREA FACILITIES**

This structured system of recreation allows for the successful operation of facilities that provide for large groups with a minimum of conflict.

Swimming Facilities

The 30-foot by 70-foot swimming pool at Castle Rock Recreation Area is one of the most popular features of the Park attracting people who want to cool off during the warm Walnut Creek summers. The oak tree shaded, fenced swimming pool located at the center of Castle Rock's facilities functions as the focal point of all the surrounding recreational activities. Swimming is typically permitted between 11:00 a.m. and 5:00 p.m. The pool is staffed by a lifeguard during the designated summer swim season (usually May to October). The wood decks that enclose the entire swim area are filled with lounge chairs and serve as the center for socializing and relaxing. (See Figure 4-4.)

Adjacent to the pool are a small lawn area, a food concession, and a bathhouse. The food concession supplies beverages and snack items, and consists of a structure that houses a counter service area, a storage room and staff office. Bathhouse facilities include dressing rooms, showers, and restrooms. Bathhouse restrooms need to be refurbished and the swimming pool needs resurfacing.



High Steppin' Hill Picnic Area around Dance Floor

Picnic Facilities

Seven reservable group picnic facilities are scattered throughout the valley of Castle Rock Recreation Area. They range in visitor capacity from a maximum of 100 persons at Shady Glen up to a maximum of 600 persons at Eddybrook Hollow. Large groups of 1,500 to 3,000 can reserve the entire facility for exclusive use. Typically, different groups will reserve separate picnic sites and use the facilities concurrently.

Four picnic areas (Castle View, Shady Glen, High Steppin' Hill, and Pool Oak Terrace) are clustered around the swimming pool, lawn, beverage stand, and bathhouse facilities, each containing picnic tables and barbecue pits. Three other picnic sites are maintained at the north and south ends of Castle Rock.

Ford's Well and Eddybrook Hollow picnic sites are located at either end of the Park adjacent to field game areas and paths leading to other activities in Diablo Foothills. These sites accommodate the largest reserve groups that visit Castle Rock. A smaller picnic site, Castle Tree is also located adjacent to Ford's Well and the large parking lot. It has its own restrooms and a beverage stand.

There are no family picnic sites (drop-in public picnic facilities) in Diablo Foothills or Castle Rock Recreation Area.

Other Recreational Facilities

Castle Rock provides an extensive variety of special activities. Irrigated turf areas are used for volleyball and softball. Visitors have requested additional turf meadows for informal games. An archery range, horseshoe pits, bocce ball court, dance floor, ping pong table, dunk tank, tetherball, playground, and hayrides are other attractions featured at Castle Rock.

Services

The Picnic People specialize in preparing picnic events for large groups of 1,000 to 3,000 people (e.g., company employees, youth clubs, church groups). The concessionaire will tailor a picnic event to the budget and recreation requirements of a client. The Picnic People staff provide tickets, promotional flyers, program activities, and catering information. Castle Rock staff supervise field games like archery and bocce ball and host special events: dance contests, face painting, relay races, tug-of-war and hayrides.



Archery Range at Castle Rock

The concessionaire also offers a catering service which provides beverages and barbecue style meals. Alcoholic beverages can also be purchased during specific, limited hours.

Park Use

The District has owned Castle Rock Recreation Area since 1985. The Picnic People have managed the facilities at Castle Rock since 1986 and report the following attendance figures:

TABLE 5 Castle Rock Park Use Three Year Summary 1986 - 1988				
<u>Year</u>	<u>Use Days</u>	<u>Total Groups</u>	<u>Total Guests</u>	<u>Average # Guests Per Weekend Day</u>
1986	42	127	20,150	531
1987	48	151	24,676	623
1988	52	164	30,671	708
3-Year Total	142	442	75,497	621

The facilities at Castle Rock are used from May through mid-October with peak use occurring during summer weekends. Castle Rock Recreation Area is usually solidly booked in advance for most of June and all of July, August, and September. Castle Rock accommodates several private groups visiting the Park simultaneously or a single large group (e.g., a company picnic) occupying the entire Park. Patrons need to commit to a minimum of 1,000 visitors to reserve all of Castle Rock's facilities. Approximately six to eight groups a year reserve the entire recreation area. One thousand six hundred visitors is the maximum number accommodated at Castle Rock on a high use weekend day. The concessionaire is prepared to handle 1,000 visitors on a weekend day.

Typically, a Castle Rock weekend day is booked at a maximum of 1,200 persons with usually 800 to 900 visitors in attendance. Most high use weekends are reserved by several groups at once. Multiple groups require more space than a single large group, therefore, reservations for a single weekend day generally do not exceed 1,200 persons.

In general, park visitors attend Castle Rock in large groups as members of high school and family reunions, youth groups, and company employees seeking active sports, park-like surroundings, and a supervised environment within which to bring their children. Visitors are attracted to Castle Rock's range of facilities located in a rural setting.

Very few group facilities are available in the Bay region that have the capacity to accommodate 1,500 to 3,000 people. The only facilities that are suitable for groups of this size exist at Great America and Marine World. The cost of a picnic event at these parks is prohibitive to many organizations and the entertainment oriented atmosphere is not conducive to interactive group gatherings. Visitors to Castle Rock favor the convenient location, the surrounding open space, and the recreational opportunities offered at these facilities and the opportunity to socialize with coworkers in a non-work environment.

2. Resource Issues

- The District needs to determine the future use of Castle Rock Recreation Area as a drop-in public facility or a reservations only facility.
- Public family picnic sites are not available in Diablo Foothills.
- There is no security residence to protect facilities at Castle Rock during nighttime.
- Castle Rock facilities are in disrepair. Both the pool and the internal road need resurfacing and the restrooms need to be refurbished.
- The location of the existing parking area conflicts with park use. It is also excessively dusty during dry summer months and is potentially degrading to Pine Creek.
- Park users have requested additional turf meadow areas and shade trees in recreation area.

D. Service Facilities and Utilities

1. Police Protection

The EBRPD participates in a Mutual Aid Assistance program which provides multi-jurisdictional emergency response services to municipalities sharing a common boundary. Diablo Foothills Regional Park and Castle Rock Recreation Area are served by the EBRPD Public Safety Department with support services provided by the City of Walnut Creek, the Contra Costa County Sheriff's Office, and the California Highway Patrol.

Diablo Foothills receives full police services from the EBRPD Public Safety Department, the primary law enforcing authority for the parks. The Public Safety Headquarters in Castro Valley assumes the ultimate responsibility in providing police coverage to the parks. Public Safety patrols of Diablo Foothills originate at different substations depending on shift and schedule changes. Public Safety substations located at Contra Loma, Shadow Cliffs, and Tilden Park all serve Diablo Foothills depending upon shift rotations.

The City of Walnut Creek is capable of providing a three- to five-minute response time to Diablo Foothills.

The Contra Costa Sheriff's Department has formal jurisdiction over all unincorporated areas within the County, including the Alamo area adjacent to Diablo Foothills. Response times for sheriff's patrols are generally longer than those of municipal police departments, because of the large area and less frequent patrol provided by the sheriff's department.

The California Highway Patrol has authority over the unincorporated roads and county roads, and operates patrols on I-680 to Diablo Foothills.

Full facility parks near urban areas (like Castle Rock Recreation Area) can generate law enforcement problems primarily due to the high number of visitors. Typical incidents that may occur in the Park are theft, vandalism, drug or alcohol abuse, as well as vehicle-related problems such as traffic accidents or conflicts. Trespassing and illegal entry of the Park are also occasional problems. In general controlled-entry parks like Castle Rock tend to generate fewer incidents because park users know one another and conduct themselves responsibly in a group situation.

2. Fire Protection

Fire protection services are provided by three agencies in the general vicinity of Diablo Foothills. The EBRPD maintains a fire fighting unit responsible for fire protection on regional parkland and other properties through mutual assistance agreements with Consolidated Fire of Contra Costa County and the California Department of Forestry.

Consolidated Fire of Contra Costa County provides initial response (within three to five minutes) to medical and fire emergencies in Walnut Creek, Concord and Martinez. The primary fire protection services are provided by the EBRPD fire fighters stationed at Tilden and Redwood Regional Parks and Contra Loma Regional Recreation Area. EBRPD fire protection also includes services like building inspections and fire trail maintenance.

Adequate water and access for fire response exist at Castle Rock Recreation Area. Two fire hydrants exist at Castle Rock. One is located at the entrance of the Park and the other is located in the main parking area. The water from two stock ponds, the swimming pool and the spring is also available for fire fighting. There are no developed water lines in the rest of Diablo Foothills. A fire in these areas would require water to be trucked in or pumped from existing waterways.

3. Water Service

The domestic water supply at Castle Rock Recreation Area is supplied by Contra Costa County Water District. The water lines include a four-inch main running from the walnut orchards west of Castle Rock Road to the restrooms and Castle Tree picnic area inside Castle Rock Park. A water tank and pump house were installed by EBRPD in 1985 to store water for peak use periods until municipal water was brought into the Park. These facilities are no longer needed since a municipal water line now services the park facilities.

During the construction of the Livorna Road staging area adjacent to the Stonegate Subdivision, water pipes were installed on District property to tie into East Bay Municipal Utility District water lines. A pipeline connecting the staging area waterlines to the mainline and a water meter need to be installed before drinking fountains and water troughs for horses can be developed.

Several small cattle watering ponds are located on the west slopes of Shell Ridge located within park boundaries. These ponds were created by previous landowners who constructed small earthen dams across gullies to catch runoff.

4. Sewer, Wastewater, and Drainage

Sewer and wastewater facilities serving the 22 toilets, concession building, bathhouse, and pool at Castle Rock Recreation Area include: a 1,000 gallon septic tank and four-foot by sixty two-foot leach field which handles wastewater from the bathhouse showers and restrooms; a 1,000 gallon tank and sixty foot by nine foot leach field adjacent to the concession building; a septic tank and leach field shared by the Castle Tree restrooms; and a gray water system which pumps water from the pool into the sump box by the horseshoe pits.

In 1985 the District acquired Castle Rock and upgraded the leach fields to comply with existing health code standards. However, expansion of park use at these facilities would require further assessment to determine the capacity of the leach fields.

There are no sewer or wastewater facilities in Diablo Foothills Regional Park. Diablo Foothills is outside of the Central Contra Costa County Sanitary District. The closest sewer line connection is approximately one and one-half miles north along Castle Rock Road at the North Gate Senior High School.

5. **Electricity and Telephone**

Electricity and telephone service are provided from lines located north of the Castle Rock Recreation Area on Castle Rock Road. Underground wires provide electricity to all Castle Rock facilities. Telephones are located at the bathhouse and concession building.

6. **Gas**

A 150-gallon liquid petroleum gas tank is located behind the dance floor west of the entrance road. It is used to heat pool and shower water and stoves at Castle Rock Recreation Area.

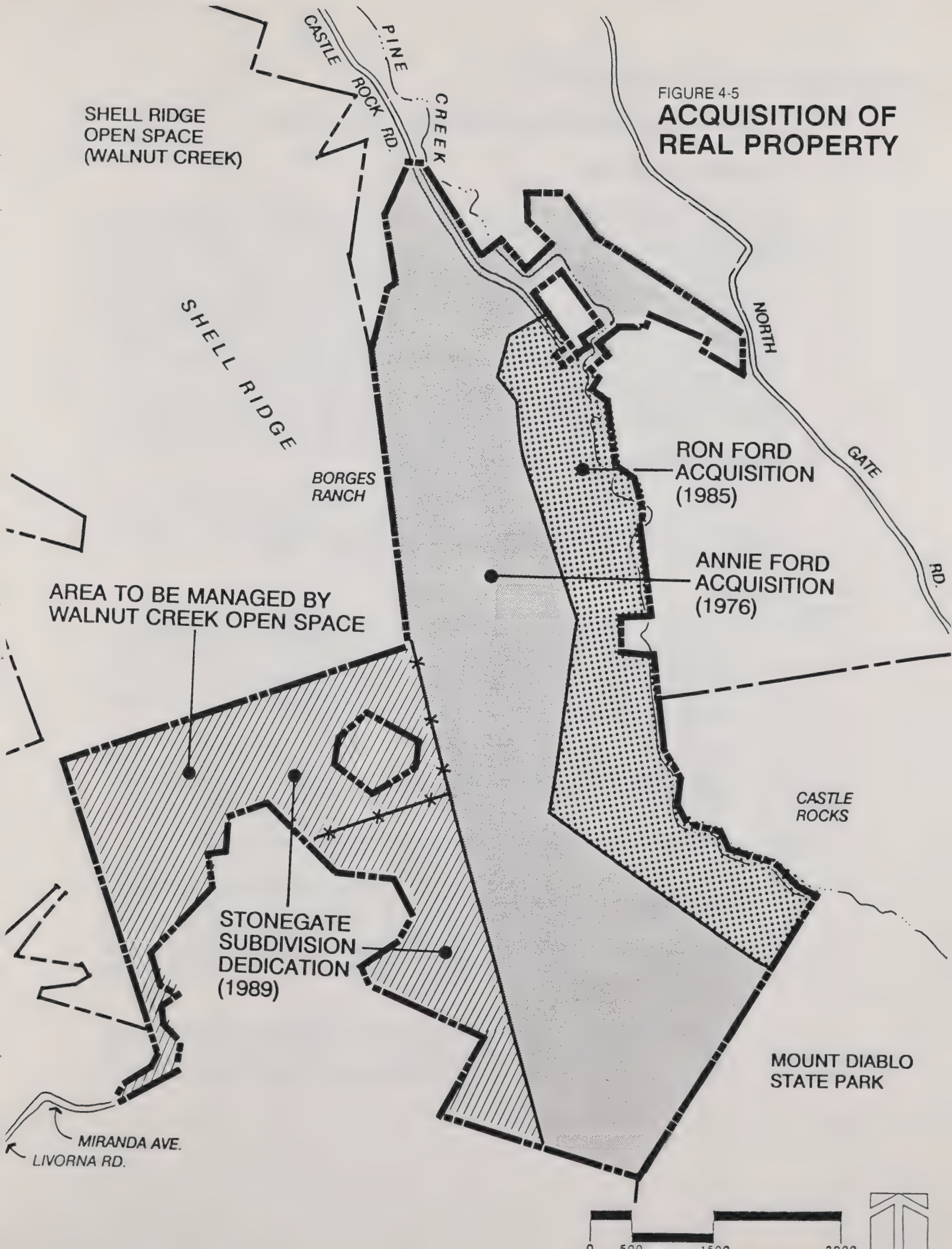
7. **Park Service Yard**

There is no District service yard at Castle Rock Recreation Area or Diablo Foothills Regional Park. Castle Rock is serviced and maintained by both the concessionaire and the District's recreation manager whose office is located at the Public Safety Headquarters in Castro Valley. Diablo Foothills is serviced by District field staff housed at the service yard located in Las Trampas Regional Wilderness.

8. **Resource Issues**

- The leach fields will require further evaluation to determine their capacity if park use of Castle Rock increases.
- The two existing wells at Castle Rock are contaminated and abandoned. The future use of these wells needs to be determined.
- A small service area for District field staff and equipment will be needed to service Castle Rock and Diablo Foothills. If the District assumes the responsibility of operating Castle Rock as a public recreation area, a larger service facility will be required to maintain the Park.

FIGURE 4-5
**ACQUISITION OF
REAL PROPERTY**



E. Legal Encumbrances Affecting Park Use

1. Ownership of Park Land

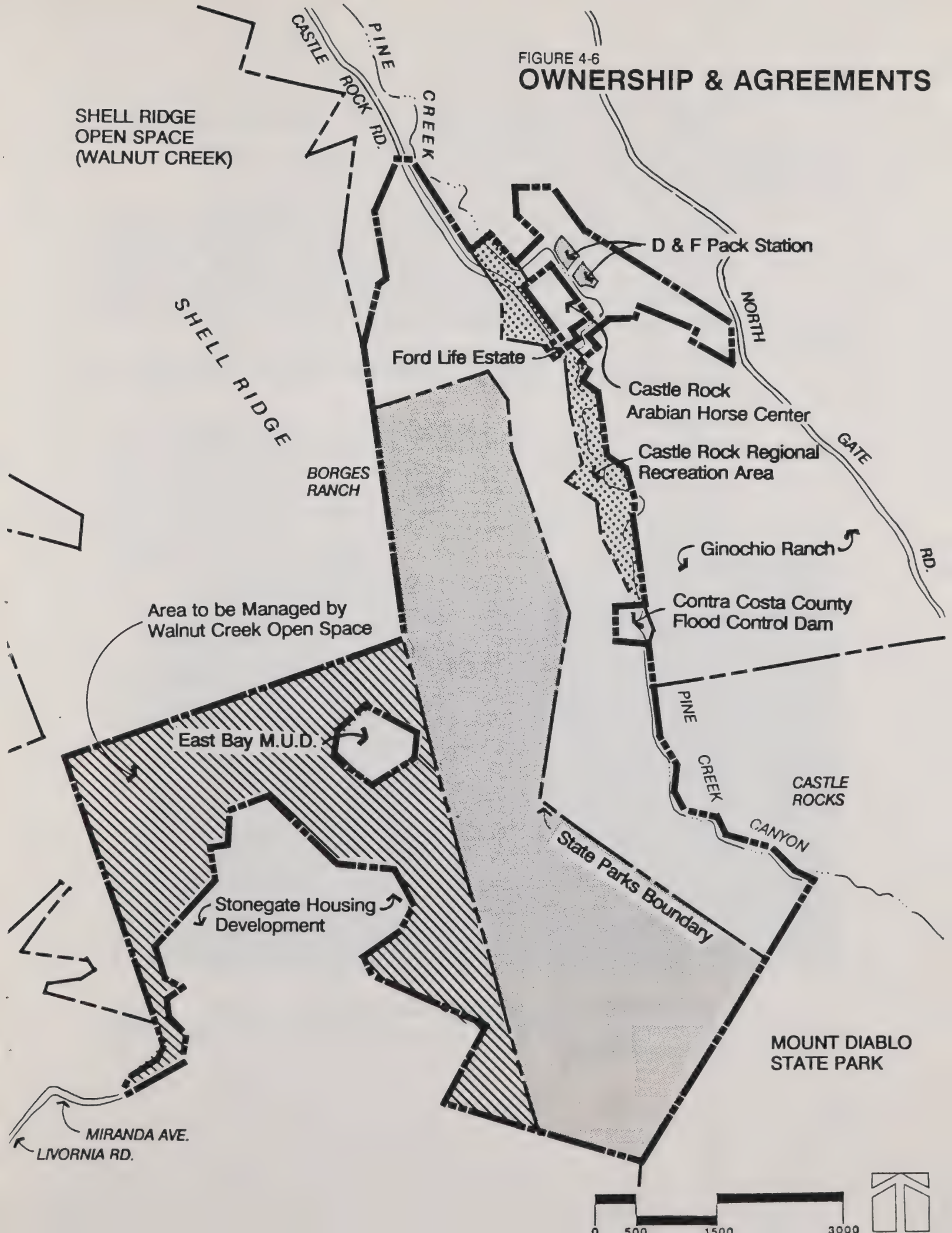
Title to the approximately 978 acres of real estate at Diablo Foothills Regional Park began in 1976 and has occurred in three transactions (see Land Use History, Figure 4-5). In 1983 a land swap designed to protect the City of Berkeley's Claremont Canyon Park from condominium development was agreed to by EBRPD and the State of California. The EBRPD agreed to trade 350 acres of Mt. Diablo foothills property to the state for 80 acres of the former state School for the Deaf and Blind in Claremont Canyon. The state-owned portion of Diablo Foothills is located on Shell Ridge and contains riding trails and is crossed by the Briones to Mt. Diablo Regional Trail. It also supports an outstanding population of a rare and endangered wildflower, fritillaria liliaceae. EBRPD has continued to manage and operate the property from the state as an adjunct to Diablo Foothills Regional Park. A lease agreement needs to be prepared to address the public use and resource management of this portion of Diablo Foothills.

Easements and other legal agreements held by others for use at Diablo Foothills and Castle Rock Recreation Area are for either access to adjacent land; renovation, operation, and maintenance of facilities; or for grazing activities.

2. Easements

- In 1989 EBRPD was granted easements for emergency vehicles in three locations through the Stonegate Subdivision adjacent to Diablo Foothills. Stonegate, located at the end of Livorna Road East, also maintains the District-owned staging area between the road and the trail link into Walnut Creek Open Space and Diablo Foothills.
- Under a 25-year license agreement, Contra Costa Water District has encroachment rights on District property to place and maintain water lines to serve the public facilities at Walnut Creek Open Space Borges Ranch.
- A Pacific Gas and Electric easement extends into Pine Canyon.
- Contra Costa Flood Control retains maintenance and operation rights of the earth dam across Pine Creek.
- The East Bay Municipal Utility District owns a 10-acre parcel located near the southwestern boundary of the Park and has an easement for a serviceray to the water tank site.
- An easement dedicated to R-7A Contra Costa County Parks and Recreation is located at the Livorna Road staging area. This trail heads east, continues around the flood control basin and crosses private open space into Diablo

FIGURE 4-6
OWNERSHIP & AGREEMENTS



Foothills. Contra Costa County owns and maintains this easement for equestrian access into Diablo Foothills.

3. Licenses

- EBRPD is in the process of negotiating a license agreement with Walnut Creek Open Space for Walnut Creek to operate and maintain property formerly known as the Borges Ranch which is now part of the Diablo Foothills Regional Park. The property is located to the northwest of the Livorna Road staging area and will continue to be used exclusively for open space, passive recreation, and grazing activity.
- EBRPD has granted Ronald Ford a grazing license for cattle grazing on Diablo Foothills Regional Park.
- A year to year license agreement exists between The Picnic People, Inc., a California corporation, and EBRPD to provide food and recreational services at the Castle Rock Recreation Area facilities. The terms of the agreement allow for the licensee to operate and maintain the facilities for group use, by reservation only, for picnics, barbecues, recreational games and events. The agreement also permits: the selling of snack foods and alcoholic beverages; a catering service for large groups; and the promotion of the facilities through publicity.

4. Other Legal Agreements

- The District has granted a year to year land use agreement to the D & F Pack Station to occupy two and one-half acres adjacent to Pine Creek in the Castle Rock Recreation Area. D & F Pack Station holds horses on two designated District areas that are used for guided trail rides through District parkland enroute to Mt. Diablo. This year to year agreement will continue until the Land Use-Development Plan for Diablo Foothills and Castle Rock is completed and the appropriateness of continuing this use can be determined.
- A land use agreement exists between EBRPD and Ron Ford, licensee, doing business as Castle Rock Arabian Horse Center. The Castle Rock Arabian Horse Center sits on approximately ten acres of privately-owned flat valley bottom land near Pine Creek. The terms of this agreement permit the grazing and boarding of horses and the construction, maintenance and operation of stables and paddocks on a portion of District land adjacent to this private in-holding. This agreement is also renewed on a year to year basis pending completion of the Land Use-Development Plan.
- Ronald and Joan Ford, the former owners of a 230-acre portion of Castle Rock Recreation Area, occupy a two-acre life estate at the northeastern entrance to the Park.

5. Resource Issues

- The operational agreement between the State Parks and EBRPD regarding the management of the state-owned portion of Diablo Foothills must address the option to graze on this land and the protection of the unique plant populations that occur there.
- The solid waste from D & F Pack Station and the Castle Rock Arabian Horse Center may degrade the water quality of Pine Creek.
- The commercial land use of D & F Pack Station and Castle Rock Arabian Horse Center needs to be evaluated for both their impact on natural resources and potential park use.



*View of D & F Pack Station and Castle Rock Arabian Horse Center
(looking east)*

F. Zoning and Other Agency Designations

1. Land Use Designations

Contra Costa County

Diablo Foothills Regional Park is located entirely within the jurisdictional authority of Contra Costa County. The property is zoned "Parks and Recreation." This designation: "includes all publicly-owned city, district, county and regional parks facilities . . . appropriate uses in the designation are passive and active recreation-oriented activities, and ancillary commercial uses such as snack bars . . ."

Contra Costa County is presently revising its General Plan. The current revision shows the following land use designations adjacent to Diablo Foothills Regional Park. To the north, Single Family Residential-Very Low Density (SU) is proposed. This designation allows a maximum of less than one (up to nine) single family unit per net acre. Primary land uses which shall be permitted in this designation include detached single family homes and a limited number of livestock consistent with a rural lifestyle. The southern edge surrounded by Mt. Diablo State Park is designated Parks and Recreation (PR). In the east, designations range from Parks and Recreation (again including Mt. Diablo) to Agricultural Lands (AL). This land use designation includes privately owned hilly rural lands used for grazing livestock or dry grain farming. Both Open Space (OS) and Single Family Residential-Low Density (SL) designations occur to the west. The Open Space designation areas primarily involve resource management and low intensity recreation for local residents. The Single Family Residential-Low Density designation allows for detached single family homes of 1.0 and 2.9 units per net acre. General Plan designations are provided in Figure 4-7.

City of Walnut Creek General Plan

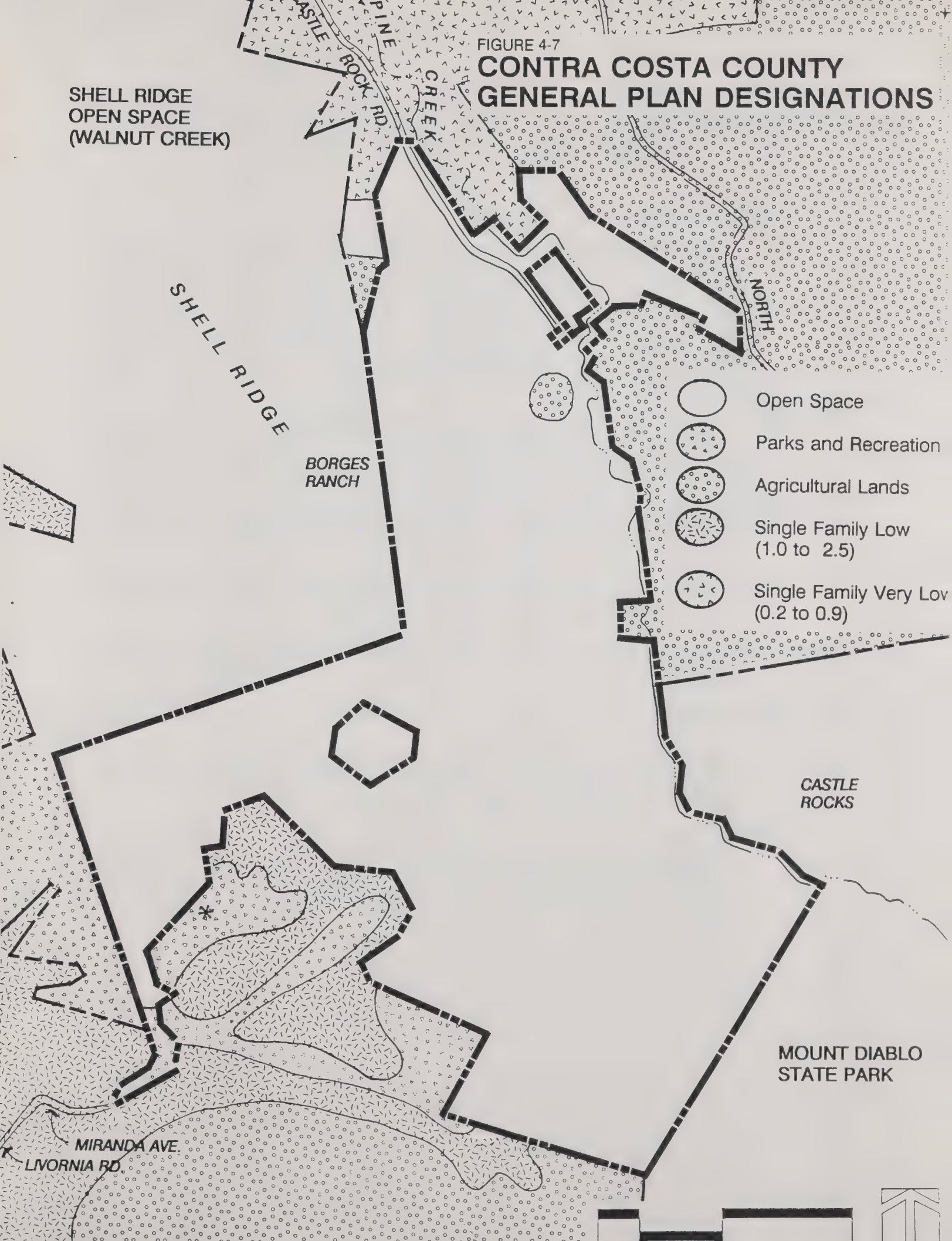
General Plan designations for the City of Walnut Creek closely conform to the land use designations set forth in the Contra Costa County General Plan.

The northern land use boundary along Castle Rock Road is designated Single Family Very Low (SF-VL). This designation is intended as a transition between open space or agricultural preserve areas and low density single family development. This designation allows for one home per acre and is also intended to preserve hillside areas. To the east, the land use designation, Open Space/Agriculture (OS/A) is intended to maintain rangeland currently in use and to protect the open space/agricultural character.

West of the Park, both Open Space/Recreation (OS/R) and Single Family Low (SFL) residential designations occur. The SFL designation permits up to three dwelling units per acre and includes the transitional area between single family neighborhoods and outlying residential areas. OS/R includes existing publicly owned

FIGURE 4-7

CONTRA COSTA COUNTY GENERAL PLAN DESIGNATIONS



open space, parks and some County-owned land designated for open space uses. Land use designations do not affect the southern edge of the Park because the southern boundary of the General Plan area does not extend below Mt. Diablo State Park.

2. Adjacent Land Uses

East: The adjoining land uses to the east of the Park include the extensive Ginochio Ranch and Mt. Diablo State Park. The Ginochio Ranch located to the north of Mt. Diablo, is a privately owned open space used for cattle grazing. Mt. Diablo State Park is a 20,000-acre park managed by the California Department of Parks and Recreation. This state park provides for the recreational use of trails, picnicking, camping and interpretive facilities and the resource management of its open space lands.

West: West of Diablo Foothills is the Stonegate Subdivision. This is a new residential development undergoing construction. Stonegate will contain 175 single-family homes on 170 acres when completed. Construction will continue for approximately two more years. Forming the border to the northwest is the City of Walnut Creek's Shell Ridge Recreation Area. This 1,200-acre open space land is used for passive recreational purposes such as hiking, horseback riding, picnicking, and interpretive programs.

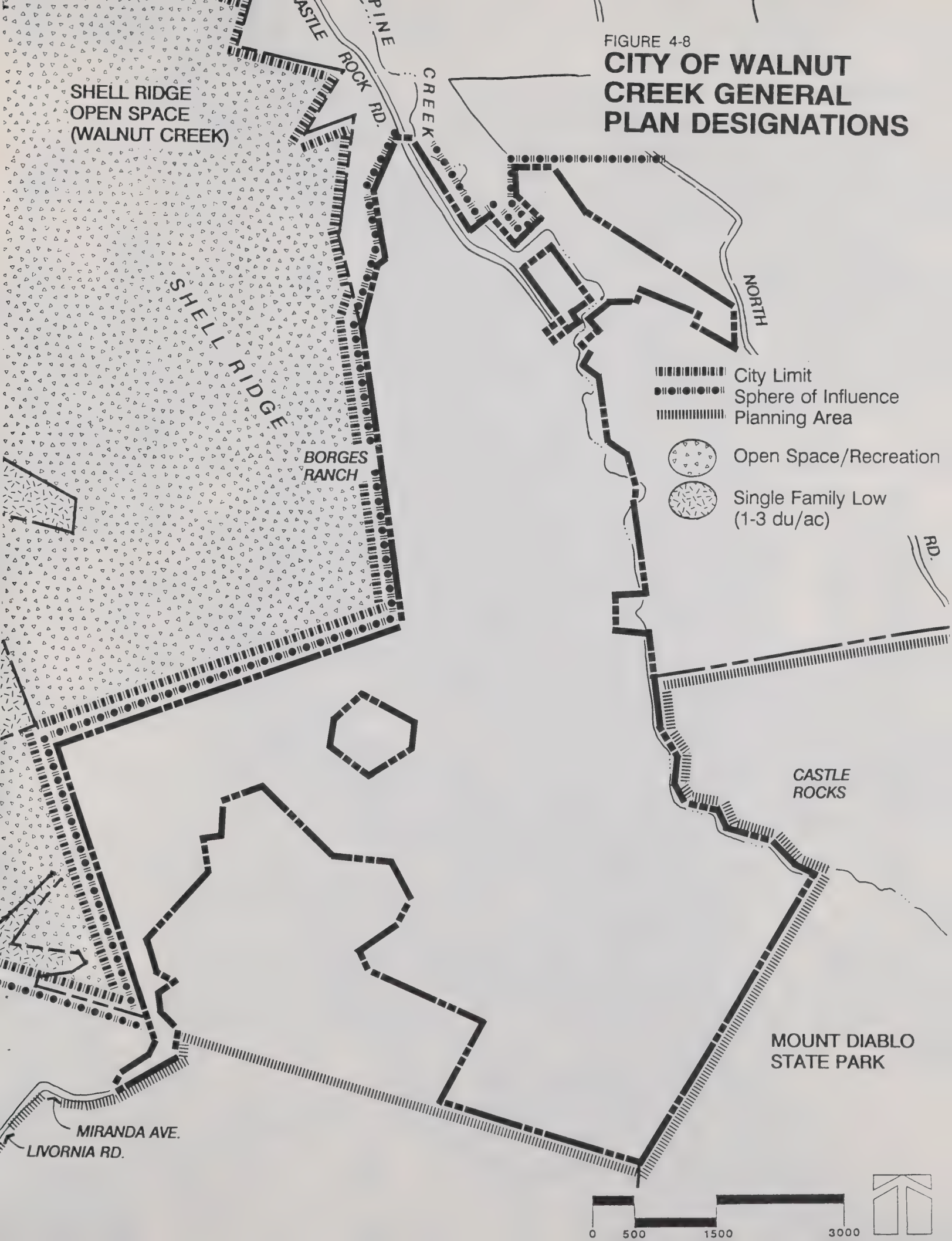
North: The land use to the north of the Park is residential low density single-family homes located along Castle Rock Road.

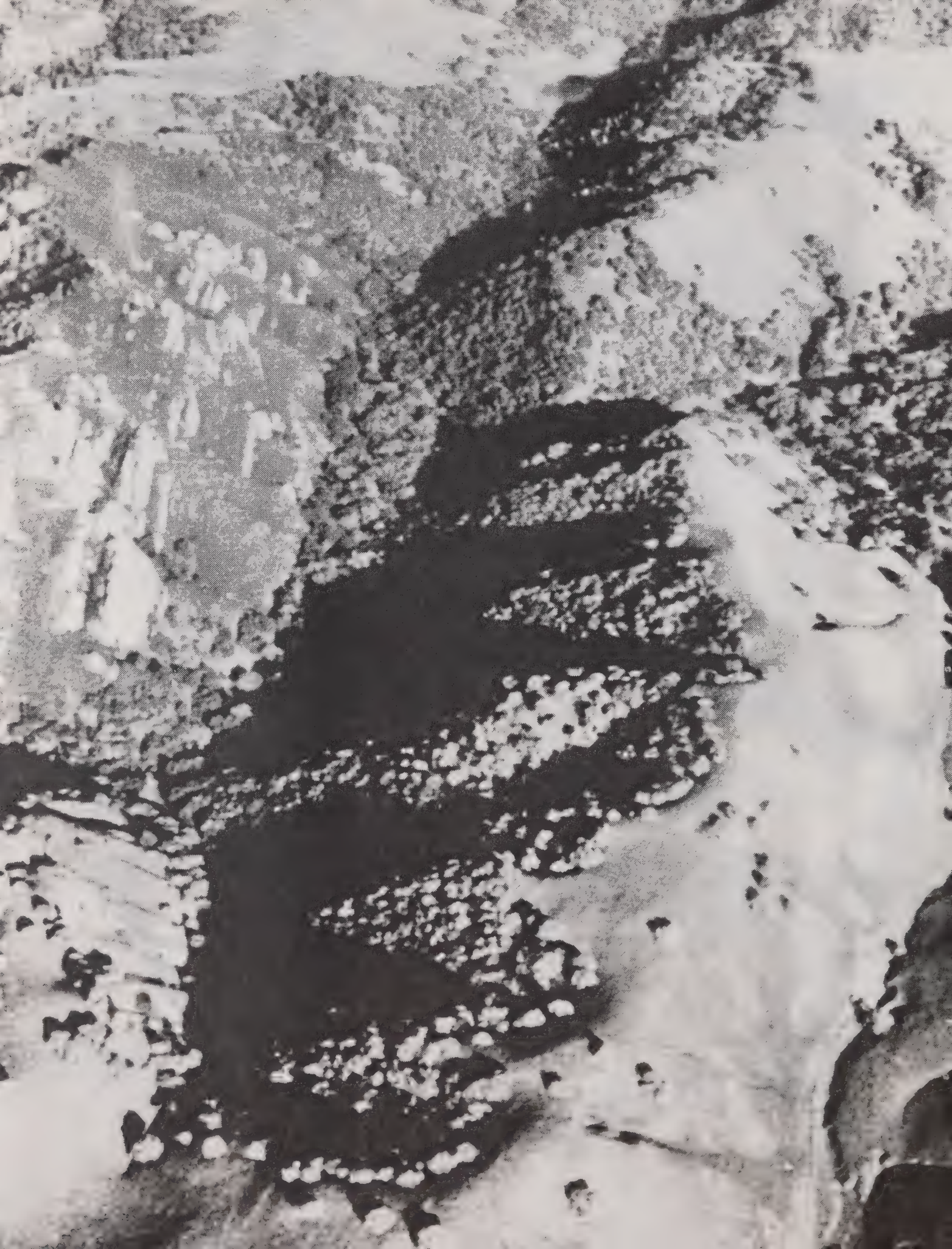
South: Mt. Diablo State Park forms the land use border to the south of Diablo Foothills.

3. Resource Issues

- The different regulations of three open space agencies (Walnut Creek Open Space, California Department of Parks and Recreation and EBRPD) must be coordinated to prevent confusion on the part of park users.
- Potential noise and traffic conflicts between residences bordering the perimeter of the Park and park users exist only to the west (Stonegate subdivision) and along Castle Rock Road to the north. New development, with associated traffic and noise, may reduce the amenities of the open space lands.

FIGURE 4-8
CITY OF WALNUT CREEK GENERAL PLAN DESIGNATIONS





V. BIBLIOGRAPHY

LITERATURE CITED

- Akre, Roger D., 1975, **Foraging Distances of *Vespula Pensylvanica* Workers**, Journal of the Kansas Entomological Society, Vol. 48, No. 1, January, p. 12-16.
- Ananian, Benjamin, 1984, **Archaeological Field Reconnaissance and Records Search of the Bogue Ranch Near Alamo, California**. Ms on file at the Northwest Information Center of the California Archaeological Inventory (S-7369, Rohnert Park, CA).
- Archeo-Tec., 1987, **A Literature Search and Archaeological Surface Reconnaissance of the Proposed High Buckhorn Reservoir, Alameda and Contra Costa Counties, California**, MS on file at the Northwest Information Center of the California Archaeological Inventory (S-9172), Rohnert Park, California.
- Association of Bay Area Governments, 1988, **The San Francisco Bay Area on Shaky Ground**, Alameda and Contra Costa County map set, Oakland, California.
- Barrett, S. A. and E. W. Gifford, 1933, "Miwok Material Culture", Bulletin of the Milwaukee Public Museum, 2:119-377.
- Barrett, Samuel A., 1919, "Myths of the Southern Sierra Miwok", University of California Publications In American Archaeology and Ethnology, 16:1-28.
- Bartolome, James, and Nancy Brownfield, 1988, **Unpublished Survey of Six Rangeland Parks in Southeast Alameda County**.
- BAAQMD, 1987 (2), **Air Pollution in the Bay Area by Station and Contaminate: 1987** (Summary sheet).
- BAAQMD, 1987, **Air Pollution in the Bay Area by Station and Contaminate: 1987** (Summary sheet).
- Bay Area Air Quality Management District, 1987, "Air Quality Handbook."
- Bennyhoff, James A., 1977, "Ethnogeography of the Plains Miwok", Center for Archaeological Research at Davis, Publication Number 5, Davis, California.
- Bohakel, Charles A., 1967, **Mt. Diablo, the "Devil" Mountain of California**, Contra Costa County Historical Society, Pleasant Hill, California.
- Bowman, Jacob, 1957, "Establishment of the Mount Diablo Lines", The Pacific Historian, August 1963:117-119.

- Briggs, Thomas S., 1989, (personal communication) California Academy of Sciences, San Francisco, California.
- Brubaker, Isabelle Spencer, 1975, "1850-1950 100 Years of Growth: A History of Walnut Creek", Contra Costa County, California.
- California Department of Fish and Game, 1989, **Natural Diversity Data Base**, Non-game Heritage Division, Sacramento, California, Antioch quad (John C. Palmer).
- California Department of Parks and Recreation, 1985, **Cultural Resources Inventory of Diablo State Park**, MS on file at DPR headquarters, Sacramento, California.
- California Department of Parks and Recreation, 1986, **Mount Diablo State Park, Resource Element**, (Revised July 1987).
- California Department of Water Resources, 1978, **Wind in California**, (Bulletin No. 185).
- Chavez, David, 1979, **Subsurface Cultural Resources Assessment of the Village Townhouses Location (Subdivision 6577)**, Walnut Creek, Contra Costa County, California. MS on file at the Northwest Information Center of the California Archaeological Inventory (S-1498), Rohnert Park, California.
- Chavez, David, 1981, **Archaeological Resources Evaluation of the Bollinger Canyon Road Site in San Ramon**, MS on file at the Northwest Information Center of the California Archaeological Inventory (S-2758), Rohnert Park, California.
- Cherrington, Ruth, 1989, (personal communication), Walnut Creek, California.
- Contra Costa County Planning Department, 1976, "Preliminary Historic Resources of Contra Costa County, California", Martinez, California.
- Contra Costa Water District, 1978, **Pine Creek Detention Basin Study**, p. 4.
- Cooper, W. S., 1922, "The Broad-Scherophyll Vegetation of California - an Ecological Study of the Chaparral and its Related Communities", Carnegie Inst. Wash. Pub., p. 122.
- Dibble, Thomas W., 1980, **Preliminary Geologic Map of the Antioch Quadrangle**, Department of the Interior, USGS, Open File Report 80-536.
- Dibble, Thomas W., 1980, **Preliminary Geologic Map of the Clayton Quadrangle**, Department of the Interior, USGS, Open File Report 80-547.
- Diblee, T.W., 1980, **Preliminary Geologic Map of the Clayton Quadrangle Open File Report #80-547**, U.S. Geologic Survey.

- Diblee, T.W., 1980, **Preliminary Geologic Map of the Las Trampas Ridge Quadrangle Open File Report #80-548**, U.S. Geologic Survey.
- Diblee, T.W., 1980, **Preliminary Geologic Map of the Walnut Creek Quadrangle Open File Report #80-351**, U.S. Geologic Survey.
- Diblee, T.W., 1980, **Preliminary Geologic Map of the Diablo Quadrangle Open File Report #80-846**, U.S. Geologic Survey.
- East Bay Regional Park District, 1987, **Pest Management Policies and Practices**, (p. 4).
- Emanuels, George, 1982, **Ygnacio Valley 1834-1970**, Walnut Creek, California.
- Fink, Leonora Galindo, 1964, **Ygnacio Valley and Rancho San Miguel**, Contra Costa County Historical Society, Pleasant Hill, California.
- Ford, Ronald, 1989, (personal communication), Walnut Creek, California.
- Hanes, T. L., 1971, "Succession After Fire in the Chaparral of Southern California", *Ecol. Monogr.* 41:27-52.
- Holman, Miley, 1979, **Archaeological Reconnaissance of the Peter's Ranch Property in San Ramon, Contra Costa County, California**. MS on file at the Northwest Information Center of the California Archaeological Inventory (S-2632), Rohnert Park, California.
- Katanho, Kathy, 1989, Vice President, Picnic People Inc., (personal communication), Little Hills Ranch, 18013 Bollinger Canyon Road, San Ramon, CA.
- Kroeber, Alfred L., 1925, "Handbook of the Indians of California", Bureau of American Ethnology Bulletin 78, Washington, D.C.
- Levy, Richard, 1978, "Eastern Miwok", In **Handbook of North American Indians, Volume 9**, California, edited by Robert F. Heizer, Smithsonian Institution, Washington, D.C.
- McCutchan, Morris H., 1977, "Climate Features as a Fire Determinant", In: **Proceedings: Symposium on the Environmental Consequences of Fire and Fuel Management in Mediterranean Ecosystems**. USDA, Forest Service. Washington, D.C. General Technical Report WO-3.
- McNaughton, S. J., 1968, "Structure and Function in California Grasslands", *Ecology* 49:962-972.
- Mcpherson, J. K., and C. H. Muller, 1969, "Allelopathic Effects of *Adenostoma fasciculatum*, 'Chamise,' in the California Chaparral", *Ecol. Monogr.* 39:177-198.

- Milliken, Randall, 1982, "An Ethnographic Study of the Clayton Area, Contra Costa County, California", In **Cultural Resources Evaluation of Keller Ranch, Clayton, California**, Coyote Press, Salinas, California.
- Murphy, Dennis, 1989, (personal communication), Center for Conservation Biology, Department of Biological Sciences, Stanford University, Stanford, California.
- Murphy, Dennis, and S. B. Weiss, 1988, **Ecological Studies and the Conservation of the Bay Checkerspot Butterfly, *Euphydrys editha bayensis***, Biological Conservation 46. pp. 183-200.
- Nagano, Chris, 1989, (personal communication), U.S. Department of Interior, Fish and Wildlife Service, Endangered Species Office, Sacramento, California.
- Naveh, Z., 1967, "Mediterranean Ecosystems and Vegetation Types in California and Israel", Ecology 48:445-459.
- Owing, Donald (personal communication) 1987, University of California, Davis. Department of Social Sciences.
- Purcell, Mae Fisher, 1940, **History of Contra Costa County**, Gillick Press, Berkeley, California.
- Ramiller, Suzanne, 1980, **An Archaeological Survey of the Marty Sherman Property, M.S. 40-80**, MS on file at the Northwest Information Center of the California Archaeological Inventory (S-2293), Rohnert Park, California.
- Roper, Christina, 1983, **Results of an Archaeological Investigation for the Proposed Hessler Property Lot Split (MS 28-82), 18115 Bollinger Canyon Road, San Ramon, Contra Costa County, California**, MS on file at the Northwest Information Center of the California Archaeological Inventory (S-5813), Rohnert Park, California.
- Salmon, Terrel P., and W. Paul Gorenzel, 1981, **Plaque: What You Should Know About It**, University of California, Division of Agricultural Science, Leaflet 21233, 14 pages.
- Salmon, Terrel P., and Robert E. Licklitter, 1984, **Wildlife Pest Control Around Gardens and Homes**, University of California, Division of Agricultural Sciences, p. 43.
- Shantz, H. L., 1947, "The Use of Fire as a Tool in the Management of the Ranges in California", California State Board of Forestry, p. 156.
- Singer, M.C., 1972, **Complex Components of Habitat Suitability Within a Butterfly Colony**, Science, New York, 176, pp. 75-77.
- Smith, J. P., and K. Berg, 1988, "Inventory of Rare and Endangered Vascular Plants of California", California Native Plant Society Special Publication No. 1, p. 168.

- Storer, Tracy I., 1958, **Controlling Field Rodents in California**, University of California, Division of Agricultural Sciences. Circular 434, p. 12.
- Twomey, Nancy, 1964, **Field Notes on the Flight and Foraging Patterns of Ground Nesting Yellowjackets**, California Department of Health Services.
- Ubrick, Darrell, 1989, (personal communication), California Academy of Sciences, San Francisco, California.
- Ubrick, Darrell, and Tom Briggs, 1989, **Harvestmen Family Phalangodidae**, 1. The new genus *Calicina*, with notes on *Sitalcina*, Proceedings of California Academy of Sciences Vol. 46, No. 4, pp. 95-136.
- United States Department of Agriculture, Soil Conservation Service, 1977, **Soil Survey of Contra Costa County**.
- Wesson, R.L., et al, 1975, **Faults and Future Earthquakes**, Studies for the Seismic Zonation of the San Francisco Bay Region, in U.S. Geological Survey Professional Paper 941.
- , 1975, "The Evolutionary Significance of Fire in the Mediterranean Region", *Vegetation* 29:199-208.



VI. REPORT PREPARATION

The Resource Analysis was prepared by the Planning and Land Stewardship Departments staff of the East Bay Regional Park District. The Planning staff, under the direction of Maxine Turner, was led by Jocelyn Real, Park Planner and Project Manager, and included work by Tom Lindenmeyer, Environmental Specialist, Judy Boshoven, Planning Technician, and Kathy Welborn, Secretary. The Land Stewardship team, under the direction of Kevin Shea, included work by Ken Burger, Water Management Specialist, Laurel Collins, Geologist, Ray Budzinski, Range Management Specialist, Nancy Brownfield, Integrated Pest Management Specialist, and John Nicoles, Land Management Specialist. The cover photograph was taken by Bob Walker. Other photographs were taken by Bob Walker and Jocelyn Real.

The information and support of other departments within the District, particularly the Operations Department and Interpretive Parklands Manager, Mel Thompson, Recreation Areas Manager, Tony Smith, and Jim Wolf, Supervisor of Diablo Foothills Regional Park, are hereby gratefully acknowledged.

VII. APPENDICES

APPENDIX A

PURPOSE AND ROLE OF THE EAST BAY REGIONAL PARK DISTRICT

The East Bay Regional Park District ("EBRPD" or "District") is a State authorized special district within Contra Costa and Alameda Counties. The District encompasses 49 parklands on approximately 66,000 acres of land. The District derives its powers from the State Public Resources Code, Sections 5500-5595. These sections: (1) established the District; (2) set procedures for acquiring, using and disposing of District property; (3) empower the District with design and maintenance of the system; (4) establish wards, the Board of Directors, officers and the right to employ staff; (5) give the District the right of eminent domain; (6) give the power to create ordinances, resolutions and motions; and (7) give the power to tax.

The EBRPD is governed by an elected Board of Directors. The Board is responsible for establishing policies and objectives, as necessary, to accomplish the District's purposes. The District's policies and objectives are: (1) to provide a diversified land and water system of regional parks; (2) to acquire, preserve and interpret significant examples of the natural environment; (3) to cooperate with other public agencies in the development of non-park open space lands; (4) to emphasize balance of both environmental concerns and regional recreation opportunities; and (5) to develop a dispersed parklands system close to the people. (See Appendix G for entire quote of "Policies and Objectives.")

APPENDIX B

EAST BAY REGIONAL PARK DISTRICT PLANNING PROCESS

Following parkland acquisition, the District's planning process is to prepare a Resource Analysis. The purpose of the Resource Analysis is to identify the significant resource values which may be adversely affected by parkland uses. Subsequent to the preparation of this analysis, a hearing is held to solicit public comments and suggestions. The next step in the process is the formulation of a Land Use-Development Plan (LUDP) and its environmental impact documentation. Once again, a hearing is to be held to receive public review and comment.

1. Regional Parkland Classification and Purpose

The East Bay Regional Park District Master Plan 1989, designated Diablo Foothills as a potential Regional Park. The Regional Park purpose and standards state:

a. Purpose

A Regional Park provides a spacious land area with outstanding natural features and many outdoor recreation opportunities for the enjoyment and education of the public.

b. Minimum Standards

To be considered as a Regional Park, an area must have the following characteristics:

- (1) Be an area of land, or land and water, of 500 or more acres.
- (2) Have, or potentially have, a scenic or natural character in 70 percent to 90 percent of its area. The District designates this portion as a Natural Unit for planning and management purposes.
- (3) Be able to accommodate a variety of recreational activities on up to 30 percent of its area. The District designates this portion as a Recreation Unit for planning and management purposes.

2. Regional Recreation Area Classification and Purpose

Castle Rock is a designated Regional Recreation Area. The purpose of a regional Recreation Area, one of the seven EBRPD Master Plan classifications, is "to provide a variety of outdoor recreation experience on a site that is particularly suited to regionally significant recreational activities." (East Bay Regional Park District Master Plan 1989.)

The District's Master Plan 1989 provides the following minimum standards applicable to Regional Recreation Areas:

a. Minimum Standards

To be considered as a Regional Recreation Area, an area must have the following characteristics:

- (1) Be 100 or more acres of either land or land and water.
- (2) Be capable of being developed for recreational uses that are compatible with any significant environmental features within or adjacent to the Regional Recreation Area.
- (3) Be capable of withstanding intensive public use. (This standard applies to both land and facilities.)
- (4) Have proven recreational resources, either created or natural, that provide recreational opportunities, such as swimming, picnics, fishing, and boating.

3. Adopted Park Planning Reports

Since most of the planning area for Diablo Foothills and Castle Rock Regional Recreation Area is a relatively recent acquisition, there is no existing Resource Analysis or Land Use-Development Plan for the Park.

Planning Area Reports

The Contra Costa County Planning Department is currently revising its General Plan. The City of Walnut Creek adopted its first General Plan in February, 1989.

4. Revisions to Resource Analysis

The Resource Analysis includes all appropriate resource and site information available at the time the document is created. If new studies are commissioned and completed by the District or other public agencies or private individuals, these reports should be included in the Resource Analysis. Since the Resource Analysis is accepted by the East Bay Regional Park District Board of Directors, any new studies need to be combined with existing data and given to the Board of Directors for their acceptance. This process would require two public hearings, one general public hearing for the discussion of the document and one public hearing at the Board of Directors level for their acceptance.

Suggestions concerning revisions to the Resource Analysis should be directed to the Parkland Planning Department of the East Bay Regional Park District.

APPENDIX C

LIST OF PLANTS

WILD PLANT LIST - KEY TO ABBREVIATIONS

Vegcode 1st two letter of genus, 1st two letters of species, 1st letter of variety (if present), number (if the letter combination is not unique).

Page Page number in: Munz, P.A. and D.D. Keck. 1973. A California Flora, combined ed. University of California Press, Berkeley. ("s" preceding the page number indicate an entry in the supplement section).

Family Contemporary names (with an "aceae" ending) were used for all families. Some traditional name spelling and the contemporary equivalent are listed below:

Apiaceae	Umbelliferae	Carrot Family
Asteraceae	Compositae	Sunflower Family
Brassicaceae	Cruciferae	Mustard Family
Fabaceae	Leguminosae	Pea Family
Poaceae	Gramineae	Grass Family
Lamiaceae	Labiatae	Mint Family

Strata F Fern

G Grass or Grasslike
S Shrub
T Tree

E-Range Elevation range, in feet, for each species in California (based on Munz). If the maximum elevation range is unknown, the estimate ends with the digit "1" (ie. 5001 = estimated at 5000 ft. or higher).

Vegtype Plant community type(s) in which the plant is usually found (based on Munz and personal observation).

C Chaparral
E mixed Evergreen forest
F Freshwater marsh
G Grassland (valley grassland in Munz)
O Oak woodland (foothill woodland in Munz)
R Redwood forest
S Scrub, brush (coastal sage scrub in Munz)
W riparian Woodland (found along drainages, not a specific community in Munz)

IN I Introduced
 N Native

L Longevity: A Annual
 AB Annual or Biennial
 AP Annual or Perennial
 B Biennial
 P Perennial

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 2 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
<u>TREES</u>										
* Acer	macrophyllum		ACMA	996	BIG-LEAF MAPLE	Aceraceae	T	0 5000	OR W NP	
O Acer	negundo	californicum	ACNEC	996	BOX ELDER	Aceraceae	T	0 6000	O W NP	
* Aesculus	californica		AECA2	994	CALIFORNIA BUCKEYE	Sapindaceae	T	0 4000 E	O S NP	
* Alnus	rhombifolia		ALRH	900	WHITE ALDER	Betulaceae	T	0 5000	R W NP	
* Arbutus	menziesii		ARME3	415	MADRONE	Ericaceae	T	0 5000 E	OR NP	
O Castanopsis	chrysophylla		CACH2	901	GIANT CHINQUAPIN	Fagaceae	T	0 1500 E	R NP	
O Cornus	nuttallii		CONU2	1035	MOUNTAIN DOGWOOD	Cornaceae	T	0 6000 E	W NP	
O Eucalyptus	globulus		EUGL2	963	BLUE GUM	Myrtaceae	T	0 4001 E	IP	
O Fraxinus	latifolia		FRLA2	447	OREGON ASH	Oleaceae	T	0 5500	W NP	
O Lithocarpus	densiflorus		LIDE2	s121	TANOAK	Fagaceae	T	0 4500 E	R NP	
O Platanus	racemosa		PLRA	897	WESTERN SYCAMORE	Platanaceae	T	0 4000	R W NP	
O Populus	fremontii		POFR3	910	FREMONT COTTONWOOD	Salicaceae	T	0 6500	W NP	
O Populus	trichocarpa		POTR4	910	BLACK COTTONWOOD	Salicaceae	T	0 9000	W NP	
O Prunus	ilicifolia		PRIL2	790	HOLLY-LEAVED CHERRY	Rosaceae	T	0 5000C	O NP	
* Quercus	agrifolia		QUAG	904	COAST LIVE OAK	Fagaceae	T	0 3000 E	O NP	
O Quercus	chasei		QUCH1	904	CHASE OAK	Fagaceae	T	1000 3000 E	O NP	
O Quercus	chrysolepis		QUCH2	906	CANYON or MAUL OAK	Fagaceae	T	0 6500CE	OR NP	
* Quercus	douglasii		QUDO	905	BLUE OAK	Fagaceae	T	0 3500	O NP	
O Quercus	dumosa		QUDU4	905	CALIFORNIA SCRUB OAK	Fagaceae	T	0 5000C	O NP	
O Quercus	garryana		QUGA2	904	GARRY or OREGON OAK	Fagaceae	T	1000 5000 E	R NP	
O Quercus	kelloggii		QUKE	903	CALIFORNIA BLACK OAK	Fagaceae	T	500 8000 E	OR NP	
O Quercus	lobata		QULO	904	VALLEY OAK	Fagaceae	T	0 2000	O NP	
O Quercus	morehus		QUMO	903	ORACLE OAK	Fagaceae	T	0 5000 E	O NP	
O Quercus	wislizenii		QUWI	903	INTERIOR LIVE OAK	Fagaceae	T	0 5000C	O NP	
O Salix	lasiandra		SALA5	917	YELLOW WILLOW	Salicaceae	T	0 8000	W NP	
* Umbellularia	californica		UMCA1	77	BAY LAUREL	Lauraceae	T	0 5000 E	OR NP	

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 3 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
SHRUBS										
* Adenostoma	fasciculatum		ADFA	778	CHAMISE	Rosaceae	S	0 5000C	GO S	NP
* Aesculus	californica		AECA1	994	CALIFORNIA BUCKEYE	Sapindaceae	S	0 4000 E	O S	NP
O Amelanchier	pallida		AMPA2	793	SERVICE BERRY	Rosaceae	S	0 11000 E	O S	NP
O Amorpha	californica	napensis	AMCAN	852	FALSE INDIGO	Fabaceae	S	0 7500C		NP
O Arctostaphylos	andersonii	pallida	ARANP	427	ALAMEDA MANZANITA	Ericaceae	S	0 2200C		NP
O Arctostaphylos	auriculata		ARAU	426	MOUNT DIABLO MANZANITA	Ericaceae	S	500 2000C		NP
O Arctostaphylos	crustacea		ARCR	429	BRITTLELEAF MANZANITA	Ericaceae	S	0 3400C		NP
O Arctostaphylos	glandulosa		ARGL4	428	EASTWOOD MANZANITA	Ericaceae	S	1000 6000CE		NP
O Arctostaphylos	glandulosa	cushingiana	ARGLC3	428	CUSHING MANZANITA	Ericaceae	S	0 2500C		NP
O Arctostaphylos	glauca		ARGL5	424	GREAT-BERRIED MANZANITA	Ericaceae	S	0 4500C		NP
O Arctostaphylos	manzanita		ARMA3	422	PARRY MANZANITA	Ericaceae	S	300 4000C	O	NP
O Aristolochia	californica		ARCA6	966	DUTCHMAN'S PIPE	Aristolochiaceae	S	0 1500CE	O	NP
* Artemisia	californica		ARCA7	1236	CALIFORNIA SAGEBRUSH	Asteraceae	S	0 2500 E	S	NP
O Baccharis	douglasii		BADO	1225		Asteraceae	S	0 1500	W	NP
* Baccharis	pilularis	consanguinea	BAPIC	1226	COYOTE BRUSH	Asteraceae	S	0 2000CE	GORS	NP
O Baccharis	viminea		BAVI	1226	MULE FAT	Asteraceae	S	0 1500	O S	NP
O Berberis	pinnata		BEP11	109	CALIFORNIA BARBERRY	Berberidaceae	S	0 4000 E	R	NP
O Brickellia	californica		BRCA5	1270	SWEET-SCENTED BRICKELLIA	Asteraceae	S	0 8000C	S	NP
O Castanopsis	chrysophylla	minor	CACHM	901	GOLDEN CHINQUAPIN	Fagaceae	S	1000 6000CE		NP
* Castilleja	foliolosa		CAFO2	671	WOOLLY PAINTED CUP	Scrophulariaceae	S	0 5000CE	GO S	NP
O Ceanothus	cuneatus		CECU2	982	BUCK BRUSH	Rhamnaceae	S	0 6000C		NP
O Ceanothus	sorediatus		CESO3	977	JIM BRUSH	Rhamnaceae	S	0 3500CE	O	NP
O Ceanothus	thyrsiflorus		CETH	979	BLUE BRUSH	Rhamnaceae	S	0 2000CE	RS	NP
O Cercocarpus	betuloides		CEBE2	781	WESTERN MT. MAHOGANY	Rosaceae	S	0 6000C	O	NP
O Cornus	glabrata		COGL	1034	BROWN DOGWOOD	Cornaceae	S	0 5000	W	NP
O Cornus	occidentalis		COOC2	1035	CREEK DOGWOOD	Cornaceae	S	0 8000 E	O SW	NP
O Corylus	cornuta	californica	COCOC	899	CALIFORNIA HAZELNUT	Corylaceae	S	0 7000 E	ORS	NP
O Cytisus	monspessulanus		CYMO2	830	FRENCH BROOM	Fabaceae	S	0 2001CE	GO S	IP
O Cytisus	scoparius		CYSC2	830	SCOTCH BROOM	Fabaceae	S	0 2001CE	GO S	IP
* Diplacus	aurantiacus		DIAU1	624	BUSH MONKEY-FLOWER	Scrophulariaceae	S	0 3000CE	RS	NP
O Eriodictyon	californicum		ERCA6	548	YERBA SANTA	Hydrophyllaceae	S	0 5500CE	OR	NP
O Eriophyllum	confertiflorum		ERCO7	1149	GOLDEN YARROW	Asteraceae	S	0 8000C	S	NP
O Eriophyllum	jepsonii		ERJE	1148	JEPSON ERIOPHYLLUM	Asteraceae	S	1000 3500	O	NP
O Forestiera	neomexicana		FONE1	448	DESERT OLIVE	Oleaceae	S	0 6700C	O S	NP
O Fraxinus	dipetala		FRDI	447	FOOTHILL ASH	Oleaceae	S	0 3500C	O	NP
O Garrya	elliptica		GAEL	1037	SILK TASSEL BUSH	Garryaceae	S	0 2000CE	S	NP
O Garrya	fremontii		GAFR	1036	BEAR BUSH	Garryaceae	S	0 7500CE		NP
O Gutierrezia	californica		GUCA	1167	CALIFORNIA SNAKEWEED	Asteraceae	S	0 1000C	GO	NP
O Haplopappus	arborescens		HAAR	1183	GOLDEN FLEECE	Asteraceae	S	300 4000C	O	NP
O Haplopappus	linearifolius		HALI	1180		Asteraceae	S	0 6000C	S	NP
O Helianthemum	scoparium	vulgare	HESCV	173	RUSH-ROSE	Cistaceae	S	0 4000C		NP
O Helianthus	gracilentus		HEGR3	1089	CHAPARRAL SUNFLOWER	Asteraceae	S	200 6000C		NP
* Heteromeles	arbutifolia		HEAR2	794	CHRISTMAS BERRY or TOYON	Rosaceae	S	0 4000CE	O S	NP
O Holodiscus	discolor		HODI	759	CREAM BUSH or OCEAN SPRAY	Rosaceae	S	0 4500CE	RS	NP
O Lepechinia	calycina		LECA3	707	PITCHER SAGE	Lamiaceae	S	0 3000C	O	NP
O Lonicera	hispidula	vacillans	LOHIV	1051	CALIFORNIA HONEYSUCKLE	Caprifoliaceae	S	0 2500 E	RS	NP
O Lonicera	interrupta		LOIN3	1051	CHAPPARRAL HONEYSUCKLE	Caprifoliaceae	S	1000 6000C	O	NP
O Lonicera	subspicata	johnstonii	LOSUJ	1051	MORONEL or S. HONEYSUCKLE	Caprifoliaceae	S	0 3000C		NP
O Lupinus	albifrons		LUAL3	823	SILVER BUSH LUPINE	Fabaceae	S	0 5000CE	S	NP
O Malacothamnus	fasciculatus		MAFA2	126	MESA MALLOW	Malvaceae	S	0 2500C	S	NP
O Malacothamnus	fremontii		MAFR	124	WHITE COAT MALLOW	Malvaceae	S	200 3500C	O	NP
O Osmaronia	cerasiformis		OSCE	791	OSO BERRY	Rosaceae	S	0 5600CE	RS	NP
O Penstemon	corymbosus		PECO4	641	ROCK PENSTEMON	Scrophulariaceae	S	0 5000 E	R	NP
O Pickeringia	montana		PIMO1	803	CHAPARRAL PEA	Fabaceae	S	0 5000CE		NP
O Prunus	emarginata		PREM	789	BITTER CHERRY	Rosaceae	S	0 4000C		NP
O Prunus	ilicifolia		PRIL1	790	HOLLY-LEAVED CHERRY	Rosaceae	S	0 5000C	O	NP
O Prunus	subcordata		PRSU2	789	SIERRA PLUM	Rosaceae	S	0 6000 E		NP
O Prunus	virginiana	demissa	PRVID	790	WESTERN CHOKE-CHERRY	Rosaceae	S	0 8200C	O	NP
* Ptelea	crenulata		PTCR	992	HOP TREE	Rutaceae	S	0 3500	O S	NP

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 4 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
O Quercus	dumosa		QUDU2	905	CALIFORNIA SCRUB OAK	Fagaceae	S	0 5000C	O	NP
O Quercus	durata		QUDU1	906	LEATHER OAK	Fagaceae	S	0 5000C	O	NP
O Quercus	wislizenii	frutescens	QUWIF	904	SHRUB INTERIOR LIVE OAK	Fagaceae	S	500 5001C		NP
* Rhamnus	californica		RHCA2	972	CALIFORNIA COFFEE-BERRY	Rhamnaceae	S	0 3500CE	RS	NP
O Rhamnus	crocea	ilicifolia	RHCR1	971	RED-BERRY	Rhamnaceae	S	0 3000C	O	NP
* Rhus	diversiloba		RHDI	998	POISON OAK	Anacardiaceae	S	0 5000	GORSW	NP
O Rhus	trilobata	malacophylla	RHTRM	998	SQUAW BUSH	Anacardiaceae	S	0 3500C	O S	NP
O Rhus	trilobata	quinata	RHTRQ	998	SQUAW BUSH	Anacardiaceae	S	0 3500C	O S	NP
O Ribes	californicum		RICA1	752	HILL GOOSEBERRY	Saxifragaceae	S	0 2500CE	OR	NP
O Ribes	malvaceum		RIMA1	749	CALIFORNIA BLACK CURRANT	Saxifragaceae	S	0 2500C	O	NP
O Ribes	menziesii		RIME	752	CANYON GOOSEBERRY	Saxifragaceae	S	0 1000 E	R	NP
O Ribes	sanguineum	glutinosum	RISAG	749	RED-FLOWERING CURRANT	Saxifragaceae	S	0 2000CE	OR	NP
O Rosa	californica		ROCA1	787	CALIFORNIA ROSE	Rosaceae	S	0 6000CE	ORS	NP
* Rosa	gymnocarpa		ROGY	788	WOOD ROSE	Rosaceae	S	0 6000CE	ORS	NP
O Rosa	spithamea	sonomensis	ROSPS	787	SONOMA ROSE	Rosaceae	S	0 4000CE		NP
O Rubus	parviflorus		RUPA	785	THIMBLE-BERRY	Rosaceae	S	0 8000 E	R	NP
O Rubus	procerus		RUPR	784	HIMALAYA-BERRY	Rosaceae	S	0 4001 E	RS	IP
* Rubus	ursinus		RUUR	784	CALIFORNIA BLACKBERRY	Rosaceae	S	0 3000 E	RS	NP
O Rubus	vitifolius		RUVI2	783	COAST CALIF. BLACKBERRY	Rosaceae	S	0 4000 E	GO W	NP
O Salix	coulteri		SACO3	917	COULTER WILLOW	Salicaceae	S	0 2000 E	R W	NP
O Salix	hindsiana		SAHI2	913	SANDBAR WILLOW	Salicaceae	S	0 3000 E	ORSW	NP
* Salix	laevigata		SALA4	913	RED WILLOW	Salicaceae	S	0 5000 E	RSW	NP
O Salix	lasiolepis		SALA3	915	ARROYO WILLOW	Salicaceae	S	0 7000 E	ORSW	NP
* Salvia	mellifera		SAME4	705	BLACK SAGE	Lamiaceae	S	0 2000C	S	NP
* Sambucus	caerulea		SACA4	1047	BLUE ELDERBERRY	Caprifoliaceae	S	0 10000CE	O S	NP
O Sambucus	callicarpa		SACA3	1047	PACIFIC RED ELDERBERRY	Caprifoliaceae	S	0 1000 E	R W	NP
O Solanum	umbelliferum	incanum	SQUMI	598	BLUE WITCH	Solanaceae	S	0 4500C	GO	NP
* Symphoricarpos	mollis		SYMO	1049	CREeping SNOWBERRY	Caprifoliaceae	S	0 5000CE	O	NP
* Symphoricarpos	rivularis		SYRI	1049	COMMON SNOWBERRY	Caprifoliaceae	S	0 4000 E	ORS	NP
* Umbellularia	californica		UMCA2	77	BAY LAUREL	Lauraceae	S	0 5000 E	OR	NP
O Vaccinium	ovatum		VAOV	430	CALIFORNIA HUCKLEBERRY	Ericaceae	S	0 2500 E	R	NP
O Viburnum	ellipticum		VIEL	1048	WESTERN VIBURNUM	Caprifoliaceae	S	1000 4500C		NP
* Vitis	californica		VICA3	969	CALIFORNIA GRAPE	Vitaceae	S	0 4000 E	O	NP

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 5 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
HERBS										
* Achillea	borealis	californica	ACBOC	1229	YARROW	Asteraceae	H	0 2500 E	GORS	NP
* Achyrachaena	mollis		ACMO	1107	BLOW-WIVES	Asteraceae	H	0 1000	GO	NA
O Agoseris	grandiflora		AGGR1	1293		Asteraceae	H	0 6200	GO	NP
O Agoseris	heterophylla		AGHE	1292		Asteraceae	H	0 7500	GO	NA
O Alchemilla	occidentalis		ALOC1	777	WESTERN LADY'S MANTLE	Rosaceae	H	0 2000 E	GO	NA
O Alisma	triviale		ALTR1	1314	WATER PLANTAIN	Alismaceae	H	0 5000		W NP
O Allium	acuminatum		ALAC	1378	HOOKEE ONION	Liliaceae	H	0 6000C		NP
O Allium	falcifolium		ALFA	1372	SICKLE-LEAVED ONION	Liliaceae	H	500 7000CE	O	NP
O Allium	serratum		ALSE	1374	SERRATUM ONION	Liliaceae	H	0 3000	GO	NP
O Allium	unifolium		ALUN	1373	COLONIAL ONION	Liliaceae	H	0 3500CE		NP
* Allophyllum	gilioides		ALGI	472		Polemoniaceae	H	0 6000C	GO	NA
O Amaranthus	albus		AMAL	387	TUMBLEWEED	Amaranthaceae	H	0 5001CE	GO S	IA
O Amaranthus	californicus		AMCA1	387	CALIFORNIA AMARANTH	Amaranthaceae	H	0 8000C	GO	NA
O Amaranthus	retroflexus		AMRE	386	ROUGH PIGWEED	Amaranthaceae	H	0 5001CE	GO S	IA
* Amsinckia	intermedia		AMIN	589	COMMON FIDDLENECK	Boraginaceae	H	0 5000	GO	NA
O Amsinckia	tessellata		AMTE	588	COBBLESTONE FIDDLENECK	Boraginaceae	H	0 6000	GO	NA
* Anagallis	arvensis		ANAR2	404	SCARLET PIMPERNEL	Primulaceae	H	0 4001CE	GORS	IA
O Anaphalis	margaritacea		ANMA1	1263	PEARLY EVERLASTING	Asteraceae	H	0 8500 E	RS	IP
O Androsace	elongata		ANELA	399		Primulaceae	H	0 4000C	GO S	NA
* Anemopsis	californica	acuta	ANCA	114	YERBA MANSA	Saururaceae	H	0 6500		W NP
O Angelica	tomentosa		ANTO	1028	WOOD ANGELICA	Apiaceae	H	0 7000C		NP
* Anthemis	cotula		ANCO2	1228	MAYWEED	Asteraceae	H	0 5001CE	GORS	IA
O Anthriscus	neglecta	scandix	ANNES	s138	BUR CHERVIL	Apiaceae	H	0 5001CE	GORS	IA
O Antirrhinum	kelloggii		ANKE	652	HOOKEE SNAPDRAGON	Scrophulariaceae	H	0 2000C	S	NA
O Antirrhinum	vexillo-calyculatum		ANVE	651	SNAPDRAGON	Scrophulariaceae	H	0 4000C	S	NA
O Apiastrum	angustifolium		APAN1	1006	MOCK PARSLEY	Apiaceae	H	0 3000C	GO S	NA
O Apocynum	cannabinum	glaberrimum	APCAG	451	INDIAN HEMP	Apocynaceae	H	0 5000CE	GORS	NP
O Aquilegia	eximia		AQEX	105	STREAM COLUMBINE	Ranunculaceae	H	0 6000		W NP
O Aquilegia	formosa	truncata	AQFOT	105	CRIMSON COLUMBINE	Ranunculaceae	H	0 8000 E	RS	NP
O Arabis	glabra		ARGL2	258	TOWER MUSTARD	Brassicaceae	H	0 7000CE	GORS	NP
O Aralia	californica		ARCA2	1000	ELK CLOVER	Araliaceae	H	0 5000 E	ORS	NP
O Arceuthobium	campylopodium		ARCA10990		PINE MISTLETOE	Loranthaceae	H	0 5001 E	O	NP
O Arenaria	douglasii		ARDO2	279	DOUGLAS SANDWORT	Caryophyllaceae	H	0 7000C	GO	NA
O Arenaria	macrophylla		ARMA1	282		Caryophyllaceae	H	15 6500 E		NP
O Argemone	munita	rotundata	ARMUR2200		THISTLE-POPPY / CHICALOTE	Papaveraceae	H	12 3200C		NP
* Artemisia	douglasiana		ARDO3	1237	CALIFORNIA MUGWORT	Asteraceae	H	0 6000CE	ORS	NP
O Asclepias	californica		ASCA3	455	ROUND-HOOD MILKWEED	Asclepiadaceae	H	0 7500C	O	NP
O Asclepias	californica	greenei	ASCAG	455	ROUND-HOOD MILKWEED	Asclepiadaceae	H	0 3500C	O	NP
O Asclepias	fascicularis		ASFA	456	NARROW-LEAF MILKWEED	Asclepiadaceae	H	0 7000C	GO	NP
O Asclepias	fascicularis		ASFA	456	MILKWEED	Asclepiadaceae	H	0 7000	GO S	NP
O Asclepias	speciosa		ASSP1	455	SHOWY MILKWEED	Asclepiadaceae	H	0 6000 E	O	NP
O Aster	radulinus		ASRA1	1197	BROAD-LEAF ASTER	Asteraceae	H	300 5000 E	O S	NP
O Astragalus	asymmetricus		ASAS2	878	ASYMMETRICAL LOCO	Fabaceae	H	200 2500	GO	NP
O Astragalus	gambelians		ASGA	864	LITTLE BILL LOCO	Fabaceae	H	0 4000	GO S	NA
* Athysanus	pusillus		ATPU1	253	SANDWEED	Brassicaceae	H	0 5000C	GO S	NP
* Baccharis	douglasii		BADO	1225		Asteraceae	H	0 1500		W NP
O Barbarea	orthoceras	dolichocarpa	BAORD	238	WINTER CRESS	Brassicaceae	H	1001 11000		W NP
O Bellardia	trixago		BETR	657		Scrophulariaceae	H	0 4001 E	GO S	IA
O Berula	erecta		BEER	1011	CUT-LEAVED WATER PARSNIP	Apiaceae	H	0 8000		W NP
O Blennosperma	nanum		BLNA	1159	COMMON BLENNOSPERMA	Asteraceae	H	0 1500	GO	NP
O Boisdouvalia	densiflora		BODE	933		Onagraceae	H	0 8500		W NP
O Boisdouvalia	glabella		BOGL	934		Onagraceae	H	0 5000		W NP
O Boisdouvalia	stricta		BOST1	934		Onagraceae	H	0 8500		W NP
O Bowlesia	incana		BOIN	1004	BOWLESIA	Apiaceae	H	0 2500	O S	NP
O Boykinia	elata		BOEL	732	COAST BOYKINIA	Saxifragaceae	H	0 5000 E	RSW	NP
* Brassica	campestris		BRCA3	236	COMMON YELLOW MUSTARD	Brassicaceae	H	0 5001CE	GORS	IA
O Brassica	geniculata		BRGE	236	LATE MUSTARD	Brassicaceae	H	0 5001	GO	IA
O Brassica	kaber	pinnatifida	BRKAP	237	CHARLOCK	Brassicaceae	H	0 5001CE	GORS	IA
O Brassica	nigra		BRNI	236	BLACK MUSTARD	Brassicaceae	H	0 5001CE	GORS	IA

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 6 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
O Brodiaea	elegans		BREL	1383	HARVEST BRODIAEA	Liliaceae	H	0 7000	GO	NP
O Brodiaea	hyacinthina		BRHY	1383	WHITE BRODIAEA	Liliaceae	H	0 5500	GO	W NP
* Brodiaea	laxa		BRLA2	1381	ITHURIEL'S SPEAR	Liliaceae	H	0 4600CE	GO	NP
* Brodiaea	pulchella		BRPU	1385	BLUE DICKS	Liliaceae	H	0 5001 E	GO S	NP
O Calandrinia	breweri		CABR7	299		Portulacaceae	H	0 3500C	S	NA
* Calandrinia	ciliata	menziesii	CACIM	299	RED MAIDS	Portulacaceae	H	0 6000	GO	NA
O Calochortus	albus		CAAL4	1346	GLOBE LILY	Liliaceae	H	0 5000C	O	NP
O Calochortus	luteus		CALU3	1351	YELLOW MARIPOSA LILY	Liliaceae	H	0 2000 E	GO	NP
* Calochortus	pulchellus		CAPU2	1347	FAIRY LANTERN	Liliaceae	H	700 4000C	O	NP
O Calochortus	splendens		CASP4	1350	LILAC MARIPOSA	Liliaceae	H	0 6000C	GO	NP
O Calochortus	umbellatus		CAUM1	1348	STAR TULIP	Liliaceae	H	1000 2200CE		NP
* Calochortus	venustus		CAVE4	1350	BUTTERFLY TULIP	Liliaceae	H	1000 8000	GO	NP
O Calycadenia	truncata		CATR4	1126	ROSIN WEED	Asteraceae	H	0 3800C	O	NA
O Calystegia	malacophylla		CAMA	s85	WOOLLY MORNING-GLORY	Convolvulaceae	H	0 2000C		NP
O Calystegia	purpurata		CAPU3	s85	BRUSH MORNING-GLORY	Convolvulaceae	H	0 1000C	S	NP
O Calystegia	subacaulis		CASU6	s85	SHORT-STEM MORNING-GLORY	Convolvulaceae	H	0 1500	O S	NP
O Campanula	prenanthoides		CAPR6	1063	CALIFORNIA HAREBELL	Campanulaceae	H	0 6000 E	R	NP
* Capsella	bursa-pastoris		CABU3	247	SHEPHERD'S PURSE	Brassicaceae	H	0 7000CE	GO S	IA
O Cardamine	oligosperma		CAOL	242	HILL CRESS	Brassicaceae	H	0 3000C	O S	NA
O Carduus	pycnocephalus		CAPY2	1280	ITALIAN THISTLE	Asteraceae	H	0 4001CE	GO S	IA
O Carduus	tenuiflorus		CATE4	1281	SLENDER THISTLE	Asteraceae	H	0 4001CE	GO S	IA
* Castilleja	affinis		CAAF	671	INDIAN PAINT BRUSH	Scrophulariaceae	H	0 7001CE	O S	NP
* Castilleja	foliolosa		CAFO2	671	WOOLLY PAINTED CUP	Scrophulariaceae	H	0 5000CE	GO S	NP
O Caulalis	microcarpa		CAMI6	1007	BUR-PARSLEY	Apiaceae	H	0 5000CE	ORS	NA
O Centaurea	calcitrapa		CECA1	1283	PURPLE STAR THISTLE	Asteraceae	H	0 4001 E	GO S	IAB
O Centaurea	melitensis		CEME1	1283	NAPA THISTLE	Asteraceae	H	0 5001CE	GO S	IA
* Centaurea	solstitialis		CESO1	1283	YELLOW STAR THISTLE	Asteraceae	H	0 5001CE	GO S	IA
O Centaurium	floribundum		CEFL1	439	JUNE CENTAURY	Gentianaceae	H	0 1600	GO	W NA
O Cerastium	viscosum		CEVI	277	MOUSE-EAR CHICKWEED	Caryophyllaceae	H	0 4001CE	GO S	IA
O Chaetopappa	alsinoides		CHAL2	1172		Asteraceae	H	0 1000	G S	NA
O Chaetopappa	exilis		CHEX	1172		Asteraceae	H	100 1500	GO	NA
O Chenopodium	album		CHAL3	372	WHITE PIGWEED	Chenopodiaceae	H	0 6000CE	GORS	IA
O Chenopodium	californicum		CHCA2	370	CALIFORNIA SOAP PLANT	Chenopodiaceae	H	0 5000C	GO	NP
* Chlorogalum	pomeridianum		CHPO1	1329	SOAP ROOT	Liliaceae	H	0 5000	GO S	NP
O Chorizanthe	membranacea		CHME1	325	MEMBRANOUS CHORIZANTHE	Polygonaceae	H	0 4500C	GO	NA
O Chorizanthe	uniaristata		CHUN	328		Polygonaceae	H	0 4000C	GO	NA
O Chrysopsis	villosa	echioides	CHVIE	1168	GOLDEN ASTER	Asteraceae	H	0 2000	GO S	NP
O Cirsium	breweri		CIBR2	1278	SWAMP THISTLE	Asteraceae	H	0 5000		W NB
O Cirsium	californicum		CICA1	1280	CALIFORNIA THISTLE	Asteraceae	H	0 7000C	O S	NB
O Cirsium	proteanum		CIPR	s166	VENUS THISTLE	Asteraceae	H	0 10000CE	GO S	NAB
* Cirsium	vulgare		CIVU	1276	BULL THISTLE	Asteraceae	H	0 5000CE	GORS	IB
O Clarkia	biloba		CLBI	941	MULE-EAR CLARKIA	Onagraceae	H	0 4000	GO	NA
O Clarkia	concinna		CLCO	943	RED RIBBONS	Onagraceae	H	0 4000 E	O	NA
O Clarkia	gracilis		CLGR	938	FAREWELL-TO-SPRING	Onagraceae	H	0 5000 E	O	NA
O Clarkia	purpurea		CLPU	940	WINECUP CLARKIA	Onagraceae	H	0 1000	GO S	NA
O Clarkia	purpurea	quadrivulnera	CLPUQ	940	FOUR-SPOT CLARKIA	Onagraceae	H	0 6000CE	GO S	NA
O Clarkia	rubicunda		CLRU	937	RED-BASED GOODETIA	Onagraceae	H	0 4001 E	O S	NA
* Clarkia	unguiculata		CLUN1	942	CANYON CLARKIA	Onagraceae	H	0 5000C	GO	NA
O Clematis	lasiantha		CLLA3	103	OLD MAN'S BEARD	Ranunculaceae	H	0 6000C	O	W NP
O Clematis	ligusticifolia		CLLI2	103	WESTERN VIRGIN'S BOWER	Ranunculaceae	H	0 7000CE	O	SW NP
O Collinsia	bartsiiifolia		COBA	s98	WHITE CHINESE HOUSES	Scrophulariaceae	H	0 2000	GO	NA
* Collinsia	heterophylla		COHE1	644	CHINESE HOUSES	Scrophulariaceae	H	0 2500CE	GO S	NA
O Collinsia	sparsiflora		COSP	646	FEW-FLOWERED COLLINSIA	Scrophulariaceae	H	0 3000C	GO	NA
* Conium	maculatum		COMA1	1011	POISON HEMLOCK	Apiaceae	H	0 5000 E	GO S	IB
O Convolvulus	arvensis		COAR2	s83	BINDWEED	Convolvulaceae	H	0 5000 E	GO S	IP
O Conyza	canadensis		COCA2	1224	HORSEWEED	Asteraceae	H	0 4001CE	GORS	IA
O Cordylanthus	pilosus		COPI2	677	BIRD'S BEAK	Scrophulariaceae	H	0 1000CE		NA
* Cotula	coronopifolia		COCO4	1234	BRASS BUTTONS	Asteraceae	H	0 5001 F		W IP
O Cryptantha	clevelandii		CRCL	574		Boraginaceae	H	0 2500C	S	NA
O Cryptantha	corollata		CRCO2	569		Boraginaceae	H	0 4500	GO	NA
O Cryptantha	flaccida		CRFL1	572		Boraginaceae	H	0 6000CE	GO S	NA

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 7 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN
O Cryptantha	micromeres		CRM12	568		Boraginaceae	H	0 2000C	S	NA
O Cryptantha	microstachys		CRM13	574		Boraginaceae	H	0 4000C	O	NA
O Cryptantha	muricata		CRMU2	570		Boraginaceae	H	0 8000CE	GO S	NA
O Cryptantha	nevadensis	rigida	CRNER	570		Boraginaceae	H	0 6000C	GO S	NA
O Cuscuta	subinclusa		CUSU2	467	COMMON DODDER	Convolvulaceae	H	0 5000CE	O S	NP
* Cynara	cardunculus		CYCA1	1273	CARDUON/ARTICHOKE THISTLE	Asteraceae	H	0 3000	GO	IP
* Cynoglossum	grande		CYGR	557	HOUND'S TONGUE	Boraginaceae	H	0 5000 E	O	NP
O Cypselea	humifusa		CYHU2	307		Aizoaceae	H	1001 3001		W NP
O Datisca	glomerata		DAGL2	177	DURANGO ROOT	Datisceae	H	0 6500CE	O	NP
O Daucus	carota		DACA3	1009	WILD CARROT	Apiaceae	H	0 5001CE	GO S	IB
O Daucus	pusillus		DAPU	1009	RATTLESNAKE WEED	Apiaceae	H	0 5000CE	O S	NA
O Delphinium	californicum		DECA2	87	COAST LARKSPUR	Ranunculaceae	H	0 2000 E		NP
* Delphinium	decorum		DEDE1	84	WOODLAND LARKSPUR	Ranunculaceae	H	0 2000	G S	NP
O Delphinium	hesperium		DEHE	88	WESTERN LARKSPUR	Ranunculaceae	H	0 2500 E	GO	NP
O Delphinium	nudicaule		DENU1	86	RED LARKSPUR	Ranunculaceae	H	0 6500CE	O S	NP
* Delphinium	variegatum		DEVA	90	ROYAL LARKSPUR	Ranunculaceae	H	0 5001	GO	NP
* Dentaria	californica		DECA4	243	MILK MAIDS	Brassicaceae	H	0 2500 E	ORS	NP
O Dicentra	chrysantha		DICH	202	GOLDEN EAR-DROPS	Fumariaceae	H	0 5000C	O	NP
O Dicentra	formosa		DIFO	203	BLEEDING HEART	Fumariaceae	H	0 7000 E	OR W	NP
O Disporum	hookeri		DIHO2	1332	FAIRY BELLS	Liliaceae	H	0 2000 E	R	NP
O Disporum	smithii		DISM	1332	LARGE-FLOWERED FAIRY BELL	Liliaceae	H	0 2000 E	R	NP
* Dodecatheon	hendersonii		DOHE	401	SHOOTING STAR	Primulaceae	H	0 6700 E	GO	NP
* Dudleya	cymosa		DUCY	722	LIVE-FOREVER	Crassulaceae	H	0 9000C	O	NP
O Dudleya	cymosa	setchellii	DUCYS	723	LIVE-FOREVER	Crassulaceae	H	0 5000C	O	NP
O Elatine	californica		ELCA3	273	CALIFORNIA WATER-WORT	Elatinaceae	H	0 5000		W NP
O Emmenanthe	penduliflora		EMPE	544	WHISPERING BELLS	Hydrophyllaceae	H	0 5000C	S	NP
O Epilobium	adenocaulon		EPAD	932	CALIFORNIA COTTONWEED	Onagraceae	H	0 11000		W NP
O Epilobium	minutum		EPMI	930	CHAPARRAL COTTONWEED	Onagraceae	H	0 5000CE	O	NP
O Epilobium	paniculatum		EPPA	929	SUMMER COTTONWEED	Onagraceae	H	0 7500CE	GO S	NP
O Epipactis	gigantea		EPGI	1399	STREAM ORCHIS	Orchidaceae	H	0 7500		W NP
O Eremocarpus	setigerus		ERSE	162	TURKEY MULLEIN	Euphorbiaceae	H	0 2500	GO S	NP
O Erigeron	foliosus		ERFO	1217	CALIFORNIA FLEABANE	Asteraceae	H	0 5000C	GO	NP
O Erigeron	philadelphicus		ERPH	1211	SKEVISH	Asteraceae	H	0 4000	G	NP
O Eriogonum	caninum		ERCA2	345	DOG BUCKWHEAT	Polygonaceae	H	1000 2200	G	NP
O Eriogonum	gracile		ERGR3	344		Polygonaceae	H	0 5000C	O S	NP
O Eriogonum	inermis		ERIN1	341		Polygonaceae	H	0 7000C	O	NP
* Eriogonum	latifolium	nudum	ERLAN	352	TIBINAGUA/NUDE BUCKWHEAT	Polygonaceae	H	0 8000CE	O S	NP
O Eriogonum	truncatum		ERTR3	346		Polygonaceae	H	1 1500C		NP
O Eriophyllum	lanatum	achillaeoides	ERLAA2	1146	OREGON SUNSHINE	Asteraceae	H	0 10000CE	O	NP
* Erodium	botrys		ERBO	144	GRAPE STORK'S BILL	Geraniaceae	H	0 4001CE	GORS	I
* Erodium	cicutarium		ERIC2	145	RED-STEM FILAREE	Geraniaceae	H	0 6000CE	GORS	I
O Erodium	malacoides		ERMA2	144		Geraniaceae	H	0 4001C	GO	I
* Erodium	moschatum		ERMO4	144	WHITE-STEM FILAREE	Geraniaceae	H	0 4001CE	GORS	I
* Erodium	obtusiplicatum		EROB	144	FILAREE	Geraniaceae	H	0 4001	GO	I
O Eryngium	aristulatum		ERAR5	1033	COYOTE-THISTLE	Apiaceae	H	0 3000		W NP
O Eryngium	vaseyi	vallicola	ERVAV	1033	MINERS' ERYNGO	Apiaceae	H	0 1800	G	W NP
O Erysimum	capitatum		ERCA3	268	WESTERN WALL FLOWER	Brassicaceae	H	0 8000CE	GO	NP
* Eschscholzia	californica	crocea	ESCAC	198	CALIFORNIA POPPY	Papaveraceae	H	0 6500CE	GO	NP
O Eucrypta	chrysanthemifolia		EUCH	519	COAST ELLISIA	Hydrophyllaceae	H	0 3000C	O S	NP
O Euphorbia	crenulata		EUCR	168	WESTERN WOOD SPURGE	Euphorbiaceae	H	0 5000CE	GORS	NP
O Euphorbia	ocellata		EUOC2	169	CANTUA SPURGE	Euphorbiaceae	H	0 1500	GO S	NP
O Euphorbia	serpyllifolia		EUSE1	171	THYME-LEAF SPURGE	Euphorbiaceae	H	0 7000CE	GO S	NP
O Euphorbia	spathulata		EUSP	168	WART SPURGE	Euphorbiaceae	H	0 4000CE	GO S	NP
O Evax	sparsiflora		EVSP	1266	DWARF EVAX	Asteraceae	H	0 2500CE	GO S	NP
O Filago	californica		FICA2	1264	CALIFORNIA COTTON ROSE	Asteraceae	H	0 3500C	GO S	NP
O Filago	gallica		FIGA	1264	COTTON-ROSE	Asteraceae	H	0 5001CE	GO S	NP
O Foeniculum	vulgare		FOVU	1016	SWEET FENNEL	Apiaceae	H	0 4001CE	GO S	NP
O Fragaria	californica		FRCA1	776	WOOD STRAWBERRY	Rosaceae	H	0 7000CE	R	NP
O Fritillaria	lanceolata		FRLA1	1341	CHECKER LILY	Liliaceae	H	0 2500CE	O S	NP
* Galium	andrewsii		GAAN1	1041	NEEDLE BEDSTRAW	Rubiaceae	H	1000 6500C	O	NP
* Galium	aparine		GAAP	1040	GOOSE GRASS or CLEAVERS	Rubiaceae	H	0 7500CE	GORS	NP

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 8 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
O Galium	californicum		GACA1	1042	CALIFORNIA GALIUM	Rubiaceae	H	0 3500 E	RS	NP
O Galium	murale		GAMU1	1041	MATTED GALIUM	Rubiaceae	H	0 3001	GO	IA
O Galium	nuttallii		GANU2	1042	NUTTALL GALIUM	Rubiaceae	H	0 3000CE	O S	NP
O Geranium	carolinianum		GECA4	141	CAROLINA GERANIUM	Geraniaceae	H	0 5000CE	GORS	NA
O Geranium	dissectum		GED1	141	CUT-LEAF GERANIUM	Geraniaceae	H	0 3000CE	GORS	IA
O Geranium	molle		GEMO	142	HAIRY GERANIUM	Geraniaceae	H	0 3001CE	GORS	IA
O Gilia	achilleaefolia		GIAC	482	BLUE GILIA	Polemoniaceae	H	0 4000CE	O S	NA
O Gilia	achilleaefolia	multicaulis	GIACM	482	BLUE GILIA	Polemoniaceae	H	0 4000 E	GO S	NA
O Gilia	capitata		GICA4	480	GLOBE GILIA	Polemoniaceae	H	0 6000 E		NA
O Gilia	clivorum		GICL	483		Polemoniaceae	H	0 4001 E	GO	NA
O Gilia	millefoliata		GIMI2	483		Polemoniaceae	H	0 3800	G	NA
O Gilia	tricolor		GITR2	482	BIRD'S-EYE GILIA	Polemoniaceae	H	0 2000	GO	NA
O Githopsis	specularioides		GISP2	1065		Asteraceae	H	0 4000CE	GO S	NA
O Glycyrrhiza	lepidota		GLLE3	888	WILD LICORICE	Fabaceae	H	0 7500CE	GO S	NP
O Gnaphalium	californicum		GNCA	1260	CALIFORNIA EVERLASTING	Asteraceae	H	0 4000CE	O S	NB
O Gnaphalium	chilense		GNCH	1260	COTTON-BATTING PLANT	Asteraceae	H	0 6000 E	RSW	NA
* Gnaphalium	palustre		GNPA	1260	LOWLAND CUDWEED	Asteraceae	H	0 9500		W NA
O Gnaphalium	purpureum		GNPU	1259	PURPLE CUDWEED	Asteraceae	H	0 4001CE	GORS	NA
O Gnaphalium	ramosissimum		GNRA	1260	PINK EVERLASTING	Asteraceae	H	0 1500CE		S NB
O Grindelia	camporum		GRCA	1166	GUM PLANT	Asteraceae	H	0 4001	GO	NP
O Grindelia	hirsutula		GRHI	1164	HAIRY GRINDELIA	Asteraceae	H	0 4001	O S	NP
O Habenaria	elegans		HAEL	1396	REIN-ORCHIS	Orchidaceae	H	0 8000C	O	NP
O Hedypnois	cretica		HECR	1302		Asteraceae	H	0 5001CE	GO S	IA
O Helenium	puberulum		HEPU1	1139	ROSILLA	Asteraceae	H	0 2000		W NB
O Helianthella	castanea		HECA5	1091	MOUNT DIABLO SUNFLOWER	Asteraceae	H	500 4000	GO	NP
O Helianthus	annuus	lenticularis	HEANL	1088	COMMON SUNFLOWER	Asteraceae	H	0 5000CE	GO S	NP
O Helianthus	californicus		HECA1	1089	CALIFORNIA SUNFLOWER	Asteraceae	H	0 1500		W NP
O Hemizonia	congesta		HECO2	1123	HAYFIELD TARWEED	Asteraceae	H	0 3001	G	NA
O Hemizonia	fitchii		HEFI	1122	FITCH SPIDERWEED	Asteraceae	H	0 3000	GO	NP
O Hemizonia	lutescens		HELU1	1123	SONOMA TARWEED	Asteraceae	H	0 3001	G	NA
O Hemizonia	luzulaefolia		HELU2	1123	TAR-WEED	Asteraceae	H	0 1000	G	NP
O Heracleum	lanatum		HELA2	1026	COW PARSNIP	Apiaceae	H	0 9000 E	ORS	NP
O Hesperocnide	tenella		HETE1	921	CREEPING NETTLE	Urticaceae	H	0 4001CE	O S	NA
O Heterocodon	rariiflorum		HERA2	1064		Campanulaceae	H	0 7500 E	GO	W NA
O Heuchera	micrantha		HEMI4	741	CREVICE ALUM-ROOT	Saxifragaceae	H	0 2000 E	RSW	NP
O Holocarpha	heermannii		HOHE	1125	HEERMANN TARWEED	Asteraceae	H	0 4000	GO	NA
O Horkelia	californica		HOCA2	761	CALIFORNIA HONEYDEW	Rosaceae	H	0 3501	G S	NP
O Horkelia	frondosa		HOFR	761	LEAFY HONEY-DEW	Rosaceae	H	0 1000CE		NP
O Hypericum	formosum	scouleri	HYFOS	192	ST. JOHN'S WORT	Hypericaceae	H	0 5000CE	RS	NP
* Hypochaeris	glabra		HYGL	1302	SMOOTH CAT'S-EAR	Asteraceae	H	0 5001CE	GORS	IA
O Iris	douglasiana		IRDO	1391	DOUGLAS IRIS	Iridaceae	H	0 1500 E	G	W NP
O Iris	macrosiphon		IRMA	1390	IRIS	Iridaceae	H	0 3000 E	GO S	NP
O Lactuca	saligna		LASA	1304		Asteraceae	H	0 4001CE	GORS	IA
O Lactuca	serriola		LASE1	1304	PRICKLY LETTUCE	Asteraceae	H	0 5001CE	GORS	IA
O Lactuca	virosa		LAVI1	1304	TALL LETTUCE	Asteraceae	H	0 4001CE	G S	IB
O Lagophylla	ramosissima		LARA	1108	SLENDER RABBIT-LEAF	Asteraceae	H	0 5200CE	GORS	NA
* Lamium	amplexicaule		LAAM	698	CLASPING HENBIT	Lamiaceae	H	0 5001	GO S	IAE
O Lasthenia	chrysostoma		LACH3	s152	GOLD FIELDS	Asteraceae	H	0 3000C	GO S	NA
O Lasthenia	glaberrima		LAGL2	1143		Asteraceae	H	0 1000	GO SW	NA
O Lasthenia	glabrata		LAGL3	1143		Asteraceae	H	0 4500	GO	NA
O Lasthenia	microglossa		LAMI2	s152		Asteraceae	H	200 3200C	GO	NA
O Lathyrus	latifolius		LALA3	891	EVERLASTING PEA	Fabaceae	H	0 5001 E	GO	IP
O Lathyrus	vestitus		LAVE	892	HILLSIDE PEA	Fabaceae	H	0 4000 E	RS	NP
O Lathyrus	vestitus	bolanderi	LAVEB	892	HILLSIDE PEA	Fabaceae	H	0 4000 E	RS	NP
O Layia	gaillardiioides		LAGA	1112		Asteraceae	H	0 3800	GO S	NA
O Layia	glandulosa		LAGL4	1111		Asteraceae	H	0 7800 E	GO S	NA
O Layia	hieracioides		LAHI2	1112		Asteraceae	H	0 2800 E	GO	NA
O Layia	platyglossa	campestris	LAPLC	1111	TIDY TIPS	Asteraceae	H	0 4000 E	GO S	NA
O Lemna	minima		LEMI1	1359	LEAST DUCKWEED	Lemnaceae	H	0 5000		W NP
* Lemna	minor		LEMI2	1359	LESSER DUCKWEED	Lemnaceae	H	0 3500		W NP
O Lemna	valdiviana		LEVA	1359	PALE DUCKWEED	Lemnaceae	H	0 7000		W NP

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 9 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	I
O Lepidium	latipes		LELA3	229	DWARF PEPPER-GRASS	Brassicaceae	H	0 2000	G	W N
* Lepidium	nitidum		LENI	228	COMMON PEPPER-GRASS	Brassicaceae	H	0 3000C	G	S N
O Lepidium	pinnatifidum		LEPI	227	PEPPER-GRASS	Brassicaceae	H	0 5001	G	I
O Lepidium	strictum		LEST	227	WAYSIDE PEPPER-GRASS	Brassicaceae	H	0 5001CE	GO	S I
O Lessingia	germanorum	glandulifera	LEGE	1222		Asteraceae	H	0 5500	GO	S N
O Lilium	pardalinum		LIPA1	1344	TIGER LILY	Liliaceae	H	0 6000		W N
O Linanthus	ambiguus		LIAM	510		Polemoniaceae	H	0 2800C	GO	N
O Linanthus	androsaceus		LIAN1	514		Polemoniaceae	H	0 3500C	GO	N
O Linanthus	bakeri		LIBA2	510		Polemoniaceae	H	0 3000 E	O	N
O Linanthus	bicolor		LIBI1	515		Polemoniaceae	H	0 5000C	GO	N
O Linanthus	bolanderi		LIBO2	510		Polemoniaceae	H	0 4000C	O	N
O Linanthus	ciliatus		LICI	513		Polemoniaceae	H	0 8000CE	GO	S N
O Linanthus	dicotomus		LIDI2	510	EVENING SNOW	Polemoniaceae	H	0 5000C	GO	S N
O Linanthus	pygmaeus		LIPY	509		Polemoniaceae	H	0 5000C		N
O Linaria	canadensis	texana	LICAT	653	TOAD FLAX	Scrophulariaceae	H	0 2000CE	GO	S N
O Linum	breweri		LIBR2	154	BREWER FLAX	Linaceae	H	400 3300C	GO	N
O Linum	californicum		LICA3	154	CALIFORNIA FLAX	Linaceae	H	0 2000C	GO	N
O Linum	micranthum		LIMI	155	LITTLE WHITE FLAX	Linaceae	H	1000 5500C	GO	N
* Lithophragma	affinis		LIAF	737	WOODLAND STAR	Saxifragaceae	H	0 3500CE	GO	S N
* Lithophragma	heterophylla		LIHE	737	HILL STAR	Saxifragaceae	H	0 6500CE	GO	S N
O Lomatium	californicum		LOCA1	1026	CHU-CHU-PATE	Apiaceae	H	0 5500C	O	N
O Lomatium	caruifolium		LOCA3	1023	ALKALI PARSNIP	Apiaceae	H	0 4000 E	GO	N
* Lomatium	dasyacarpum		LODA1	1024	LACE PARSNIP	Apiaceae	H	0 5000CE	GO	S
* Lomatium	macrocarpum		LOMA3	1024	SHEEP PARSNIP	Apiaceae	H	0 8000	O	
O Lomatium	nudicaule		LONU1	1026	PESTLE PARSNIP	Apiaceae	H	0 7000C		
* Lomatium	utriculatum		LOUT1	1022	BLADDER PARSNIP	Apiaceae	H	0 5000	GO	
* Lotus	corniculatus		LOCO2	850	BIRD'S-FOOT TREFOIL	Fabaceae	H	0 5001CE	GO	S
O Lotus	humistratus		LOHU2	847	COLCHITA	Fabaceae	H	0 6000CE	GO	S
O Lotus	micranthus		LOMI	847	HILL LOTUS	Fabaceae	H	0 5000CE	GO	S
O Lotus	purshianus		LOPU2	847	SPANISH CLOVER	Fabaceae	H	0 7000CE	GO	S
* Lotus	scoparius		LOSC	849	DEER WEED	Fabaceae	H	0 5000C		S
O Lotus	strigosus		LOST3	846	BISHOP'S LOTUS	Fabaceae	H	0 5000CE	GO	S
* Lotus	subpinnatus		LOSU2	846	CALF LOTUS	Fabaceae	H	0 2500CE	GO	S
O Lupinus	bicolor		LUBI	816	DOVE LUPINE	Fabaceae	H	0 3000CE	GO	S
O Lupinus	bicolor	microphyllus	LUBIM2816		DOVE LUPINE	Fabaceae	H	0 5000CE	GO	S
O Lupinus	bicolor	tridentatus	LUBIT1816		DOVE LUPINE	Fabaceae	H	0 5001CE	GO	S
* Lupinus	bicolor	umbellatus	LUBIU	816	DOVE LUPINE	Fabaceae	H	0 4001CE	GO	S
O Lupinus	densiflorus		LUDE	810	WHITE or PURPLE LUPINE	Fabaceae	H	0 2000CE	GO	S
O Lupinus	formosus		LUFO	827	SUMMER LUPINE	Fabaceae	H	0 2500CE	GO	S
* Lupinus	luteolus		LULU1	811	BUTTER LUPINE	Fabaceae	H	0 6000	O	
O Lupinus	nanus	latifolius	LUNAL	814	DOUGLAS' ANNUAL LUPINE	Fabaceae	H	0 2000	G	S
O Lupinus	pachylobus		LUPA2	815	MT. DIABLO ANNUAL LUPINE	Fabaceae	H	0 2000	GO	
O Lupinus	polycarpus		LUPO2	s115	SMALL-SPIKE LUPINE	Fabaceae	H	0 5000 E	O	
O Lupinus	subvexus		LUSU3	809	CHICK LUPINE	Fabaceae	H	0 2500	GO	
* Lupinus	succulentus		LUSU4	813	ARROYO LUPINE	Fabaceae	H	0 2000	GO	
O Lythrum	californicum		LYCA1	923	CALIFORNIA LOOSE-STRIPE	Lythraceae	H	0 6000		W
O Lythrum	hyssopifolia		LYHY	923	GRASS POLY	Lythraceae	H	0 5000		W
O Madia	exigua		MAEX1	1117		Asteraceae	H	0 3000CE	GO	S
O Madia	gracilis		MAGR1	1116	GUM-WEED	Asteraceae	H	0 7800CE	GO	S
O Madia	madioides		MAMA1	1114	WOODLAND TARWEED	Asteraceae	H	0 4000 E	R	
O Madia	sativa		MASA1	1116	COAST TARWEED	Asteraceae	H	0 1000CE	GO	S
O Malacothrix	clevelandii		MACL1	1298		Asteraceae	H	0 5000C	O	S
O Malacothrix	floccifera		MAFL	1298	WOOLLY-TUFT MALACOTHRIX	Asteraceae	H	0 5000 E	O	S
O Malva	neglecta		MANE	129	CHEESE-WEED	Malvaceae	H	0 5001 E	GO	S
O Malva	niccaensis		MANI1	129	BULL MALLOW	Malvaceae	H	0 5001CE	GO	S
O Malva	parviflora		MAPA1	129	CHEESE-WEED	Malvaceae	H	0 5001 E	GO	S
* Marah	fabaceus		MAFA1	1059	VALLEY MANROOT	Cucurbitaceae	H	0 2500 E	GO	S
O Marah	fabaceus	agrestis	MAFAA	1059	VALLEY MAN-ROOT	Cucurbitaceae	H	0 5000CE	O	S
O Marah	oreganus		MAOR1	1059	WILD CUCUMBER	Cucurbitaceae	H	0 6000 E	RS	
* Marrubium	vulgare		MAVU	695	COMMON HOREHOUND	Lamiaceae	H	0 9000CE	GO	S
* Matricaria	matricarioides		MAMA3	233	PINEAPPLE WEED	Asteraceae	H	0 9000CE	GO	S

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 10 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
* Medicago	polymorpha		MEPO	s116	BUR CLOVER	Fabaceae	H	0	9000CE	GO S IA
O Medicago	polymorpha	brevispina	MEPOB	s116	SMOOTH BUR CLOVER	Fabaceae	H	0	9000CE	GO S IA
O Medicago	sativa		MESA	831	ALFALFA	Fabaceae	H	0	5001	GO IP
O Melilotus	albus		MEAL1	832	WHITE SWEET-CLOVER	Fabaceae	H	0	6001CE	GO S IAB
O Melilotus	indicus		MEIN1	832	YELLOW MELILOT	Fabaceae	H	0	9000CE	GO S IAB
* Melilotus	officinalis		MEOF1	832	YELLOW SWEET-CLOVER	Fabaceae	H	0	6001CE	GO S IAB
O Mentha	piperita		MEPI	718	PEPPERMINT	Lamiaceae	H	0	2000	W IP
O Mentha	spicata		MESP2	718	SPEARMINT	Lamiaceae	H	0	5000	W IP
O Mentzelia	dispersa		MEDI	181	NADA STICK-LEAF	Loasaceae	H	0	6500CE	GO S NA
O Mentzelia	micrantha		MEMI2	181	SAN LUIS STICK-LEAF	Loasaceae	H	0	5000C	GO NA
O Microcala	quadrangularis		MIQU	438		Gentianaceae	H	0	1000	GO NA
O Micropus	californicus		MICA1	1265		Asteraceae	H	0	5000CE	GO S NA
O Microseris	campestris		MICA2	1291		Asteraceae	H	0	7001	G NA
O Microseris	douglasii		MIDO1	1291	SILVER PUFFS	Asteraceae	H	0	9000	GO NA
O Microseris	elegans		MIEL	1291	NODDING MICROSERIS	Asteraceae	H	0	9000	GO NA
O Microseris	lindleyi		MILI	1290	UROPAPPUS	Asteraceae	H	0	6000	GO S NA
O Microseris	sylvatica		MISY	1290	SYLVAN SCORZONELLA	Asteraceae	H	0	4500	GO NA
* Microsteris	gracilis		MIGR1	477	ANNUAL PHLOX	Polemoniaceae	H	0	10000CE	GO S NA
O Mimulus	cardinalis		MICA3	610	RED MONKEY-FLOWER	Scrophulariaceae	H	0	8000	W NP
O Mimulus	douglasii		MIDO2	621	DOUGLAS MONKEY-FLOWER	Scrophulariaceae	H	0	4000CE	GO SW NA
O Mimulus	fremontii		MIFR1	619	FREMONT MONKEY-FLOWER	Scrophulariaceae	H	0	7000C	O NA
* Mimulus	guttatus		MIGU	616	COMMON MONKEY-FLOWER	Scrophulariaceae	H	0	10000	W NP
O Mimulus	latidens		MILA3	614		Scrophulariaceae	H	0	2500	GO NA
O Mimulus	nasutus		MINA2	616	SNOUTED MONKEY-FLOWER	Scrophulariaceae	H	0	7500	W NA
O Mimulus	rattanii		MIRA	620	RATTAN MONKEY-FLOWER	Scrophulariaceae	H	0	3500C	GO NA
O Monardella	douglasii		MODO	716	PERFORATED MONARDELLA	Lamiaceae	H	0	3500	O NA
* Monardella	villosa		MOVI1	712	COYOTE MINT	Lamiaceae	H	0	3000 E	S NP
O Monolopia	gracilens		MOGR	1145	SMALL-FLOWERED MONOLOPIA	Asteraceae	H	500	3800CE	R NA
O Monolopia	major		MOMA2	1145	LARGE-FLOWERED MONOLOPIA	Asteraceae	H	1000	1500	G NA
O Montia	gypsophiloides		MOGY	304	ROCK MONTIA	Portulacaceae	H	0	4000C	O W NA
* Montia	perfoliata		MOPE2	302	MINER'S LETTUCE	Portulacaceae	H	0	5000CE	GORS NA
O Montia	spatulata		MOSP2	303	PALE MONTIA	Portulacaceae	H	0	2500CE	O NA
O Montia	spatulata	exigua	MOSPE	304		Portulacaceae	H	0	5500C	O NA
O Montia	verna		MOVE2	302	WATER CHICKWEED	Portulacaceae	H	0	5000	W NA
O Muilla	maritima		MUMA	1379	MUILLA	Amaryllidaceae	H	0	7500 E	GO S NP
O Myosotis	sylvatica		MYSY	558	COMMON FORGET-ME-NOT	Boraginaceae	H	0	4001 E	IP
O Navarretia	mellita		NAME	505	HONEY-SCENTED NAVARRETIA	Polemoniaceae	H	0	3500CE	O NA
O Navarretia	pubescens		NAPU2	503		Polemoniaceae	H	0	3500C	O NA
* Navarretia	squarrosa		NASQ	505	SKUNKWEED	Polemoniaceae	H	0	2500 E	O NA
O Nemophila	heterophylla		NEHE	522	WHITE NEMOPHILA	Hydrophyllaceae	H	0	5000C	O S NA
O Nemophila	menziesii		NEME	520	BABY BLUE-EYES	Hydrophyllaceae	H	0	5000C	GO S NA
O Nemophila	pedunculata		NEPE	521	SPREADING NEMOPHILA	Hydrophyllaceae	H	0	7500CE	GORSW NA
O Nicotiana	bigelovii		NIBI	602	INDIAN TOBACCO	Solanaceae	H	0	3500CE	GO S NA
O Oenothera	graciliflora		OEGR	951		Onagraceae	H	0	3500	GO NA
O Oenothera	hookeri		OEHO	946	HOOKEE EVENING PRIMROSE	Onagraceae	H	0	3500 E	RSW NB
O Oenothera	micrantha		OEMI1	955	SMALL PRIMROSE	Onagraceae	H	0	3000CE	G S NA
O Oenothera	micrantha	jonesii	OEMIJ	955	CHAPARRAL SUN-CUP	Onagraceae	H	0	3000CE	S NA
O Oenothera	ovata		OEOV	951	SUN-CUPS	Onagraceae	H	0	3500 E	G S NP
O Orobanche	bulbosa		ORBU	683	TUBEROUS BROOM-RAPE	Scrophulariaceae	H	0	5000C	GO NP
O Orobanche	californica		ORCA2	684		Scrophulariaceae	H	0	5000CE	GO SW NP
O Orobanche	fasciculata		ORFA2	683	COMMON BROOM-RAPE	Scrophulariaceae	H	0	4000C	GO NP
O Orobanche	uniflora		ORUN	682	NAKED BROOM-RAPE	Scrophulariaceae	H	0	7000C	S NP
O Orthocarpus	attenuatus		ORAT	663	VALLEY TASSELS	Scrophulariaceae	H	0	5000CE	GO NA
O Orthocarpus	densiflorus		ORDE	662	OWL'S CLOVER	Scrophulariaceae	H	0	2500 E	GO S NA
O Orthocarpus	erianthus		ORER	664	JOHNNY-TUCK	Scrophulariaceae	H	0	4000	GO NA
O Orthocarpus	lithospermoides		ORLI2	661	CREAM SACS	Scrophulariaceae	H	0	3000CE	GO NA
* Orthocarpus	purpurascens		ORPU1	662	PURPLE OWL'S CLOVER	Scrophulariaceae	H	0	3000	GO S NA
O Orthocarpus	pusillus		ORPU2	664	DWARF OWL'S CLOVER	Scrophulariaceae	H	0	4000 E	GO NA
O Osmorhiza	brachypoda		OSBR	1008	CALIFORNIA CICELY	Apiaceae	H	0	8500	O NP
* Osmorhiza	chilensis		OSCH	1009	MOUNTAIN WOOD-CICELY	Apiaceae	H	0	8000 E	R NP
* Oxalis	corniculata		OXCO1	148	CREEPING WOOD SORREL	Oxalidaceae	H	0	5001	G IP

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 11 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
O Papaver	californicum		PACA2	200	WIND POPPY	Papaveraceae	H	0 2500C	O	NA
O Parvisedum	pentandrum		PAPE2	720		Crassulaceae	H	800 2500C	O	NA
O Pectocarya	pusilla		PEPU1	556		Boraginaceae	H	0 3000C	O	NA
O Pedicularis	densiflora		PEDE1	658	INDIAN WARRIOR	Scrophulariaceae	H	0 6000C	O	NP
O Penstemon	corymbosus		PECO4	641	ROCK PENSTEMON	Scrophulariaceae	H	0 5000 E	R	NP
O Penstemon	heterophyllus		PEHE3	639	VARICOLORED PENSTEMON	Scrophulariaceae	H	0 5500C	O	NP
O Perideridia	californica		PECA3	1013		Apiaceae	H	0 3000	O	W NP
O Perideridia	gairdneri		PEGA	1013	SQUAW-ROOT	Apiaceae	H	0 11000		W NP
O Perideridia	kelloggii		PEKE	1012	DOBIE SPINDLE-ROOT	Apiaceae	H	0 4000CE	GO	W NP
O Petasites	palmatius		PEPA6	1253	WESTERN COLT'S FOOT	Asteraceae	H	0 1000 E	R	NP
O Phacelia	breweri		PHBR3	535	BREWER PHACELIA	Hydrophyllaceae	H	0 4200C	O	NA
O Phacelia	ciliata		PHCI2	531	FIELD PHACELIA	Hydrophyllaceae	H	0 5000	GO S	NA
O Phacelia	distans		PHDI1	529	WILD HELIOTROPE	Hydrophyllaceae	H	0 7000CE	O S	NA
O Phacelia	divaricata		PHDI2	538		Hydrophyllaceae	H	0 4000CE	GO	NA
O Phacelia	imbricata		PHIM	532	ROCK PHACELIA	Hydrophyllaceae	H	0 3000C	O	NP
O Phacelia	nemoralis		PHNE2	534	BRISTLY PHACELIA	Hydrophyllaceae	H	0 3000 E	ORS	NE
O Phacelia	rattanii		PHRA3	531		Hydrophyllaceae	H	0 4000	OR	W NA
O Phacelia	suaveolens		PHSU	539		Hydrophyllaceae	H	1000 4000C		NA
O Phacelia	tanacetifolia		PHTA	529	TANSY-LEAF PHACELIA	Hydrophyllaceae	H	0 4000CE	GO S	NA
O Pholistoma	auritum		PHAU2	518	FIESTA FLOWER	Hydrophyllaceae	H	0 4500C	O S	NA
* Pholistoma	membranaceum		PHME	518		Hydrophyllaceae	H	0 3500C	O	NA
O Phoradendron	flavescens	macrophyllum	PHFLM	991	LARGE-LEAF MISTLETOE	Loranthaceae	H	0 5001	O	W NP
O Phoradendron	flavescens	villosum	PHFLV	991	COMMON or HAIRY MISTLETOE	Loranthaceae	H	0 5001CE	O	SW NP
* Picris	echioides		PIEC	1303	BRISTLY OX-TONGUE	Asteraceae	H	0 5001 E	GO S	IA
O Plagiobothrys	acanthocarpus		PLAC	583		Boraginaceae	H	0 2000C	G	NA
O Plagiobothrys	bracteatus		PLBR	586	BRACTED BORAGE	Boraginaceae	H	0 5000	GO	SW NA
O Plagiobothrys	bracteatus		PLBR	586		Boraginaceae	H	0 5000CE	GO	SW NA
O Plagiobothrys	fulvus	campestris	PLFUC	580		Boraginaceae	H	0 1500	GO	NA
* Plagiobothrys	nothofulvus		PLNO	580	POPCORN FLOWER	Boraginaceae	H	0 2500	GO S	NA
O Plagiobothrys	tenellus		PLTE1	581		Boraginaceae	H	0 5000C	O	NA
O Plantago	erecta		PLER2	408	CALIFORNIA DWARF PLANTAIN	Plantaginaceae	H	0 2500C	GO S	NA
O Plantago	lanceolata		PLLA	408	ENGLISH PLANTAIN	Plantaginaceae	H	0 5001 E	GORS	IA
O Plantago	major		PLMA1	406	COMMON PLANTAIN	Plantaginaceae	H	0 5001 E	GO S	IA
O Platystemon	californicus		PLCA4	193	CREAM CUPS	Papaveraceae	H	0 3000C	GO	NA
O Plectritis	ciliosa		PLCI	1056	LONG-SPURRED PLECTRITIS	Valerianaceae	H	0 4000	GO	NA
O Plectritis	macrocera		PLMA2	1055	SHORT-SPURRED PLECTRITIS	Valerianaceae	H	0 4000	GO	NA
O Pogogyne	serpylloides		POSE2	710		Lamiaceae	H	0 4000CE	O	W NA
O Polygala	californica		POCA8	156	CALIFORNIA MILKWORT	Polygalaceae	H	0 3000C	R	NA
O Polygonum	amphibium		POAM3	364	WATER PERSICARIA	Polygonaceae	H	0 10000		W NA
O Polygonum	aviculare		POAV	362	WIRE GRASS	Polygonaceae	H	0 3001CE	GO S	NA
O Polygonum	coccineum		POCO3	364		Polygonaceae	H	0 5001		W NA
O Portulaca	oleracea		POOL	296	PURSLANE	Portulacaceae	H	0 5001	GO S	I
O Potentilla	glandulosa		POGL2	774	STICKY CINQUEFOIL	Rosaceae	H	0 8000CE	GO S	NA
O Prunella	vulgaris		PRVU	697	SELF-HEAL	Lamiaceae	H	0 5001 E	GO	I
O Psilocarphus	tenellus		PSTE	1265	SLENDER WOOLLY-HEADS	Asteraceae	H	0 6000		W NA
* Psoralea	physodes		PSPH	851	CALIFORNIA TEA	Fabaceae	H	0 7500CE	O S	NA
O Pterostegia	drymarioides		PTDR	322	PINK CREEPER	Polygonaceae	H	0 5000CE	O S	NA
* Rafinesquia	californica		RACA1	1297	CALIFORNIA CHICORY	Asteraceae	H	0 10000C		S NA
O Ranunculus	aquatilis		RAAQ	101	WATER CROWFOOT/BUTTERCUP	Ranunculaceae	H	0 6000		W NA
O Ranunculus	californicus		RACA2	95	CALIFORNIA BUTTERCUP	Ranunculaceae	H	0 3000 E	GO	SW NA
O Ranunculus	canus		RACA3	95		Ranunculaceae	H	0 1000	GO	NA
O Ranunculus	hebecarpus		RAHE	97	DOWNY BUTTERCUP	Ranunculaceae	H	0 3000C	O	NA
* Ranunculus	muricatus		RAMU1	97	SPINY-FRUITED BUTTERCUP	Ranunculaceae	H	0 3000		W NA
* Raphanus	sativus		RASA2	238	WILD RADISH	Brassicaceae	H	0 5001	GO	I
O Rigopappus	leptocladus		RILE	1152	BRISTLE-HEAD	Asteraceae	H	0 5000CE	GO S	NA
O Romanzoffia	suksdorfii		ROSU1	550		Hydrophyllaceae	H	0 2500 E	R	NA
O Rorippa	curvisiliqua		ROCU	239	WESTERN YELLOW CRESS	Brassicaceae	H	0 10000		W NA
* Rorippa	nasturtium-aquaticum		RONA	240	WATER CRESS	Brassicaceae	H	0 8000		W NA
O Rubus	vitifolius		RUVI2	783	COAST CALIF. BLACKBERRY	Rosaceae	H	0 4000 E	RS	I
* Rumex	acetosella		RUAC	356	SHEEP SORREL	Polygonaceae	H	0 10000	GO	
O Rumex	conglomeratus		RUCO	358	WHORLED DOCK	Polygonaceae	H	0 4001		W NA

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 12 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN
* Rumex	crispus		RUCR2	358	CURLY DOCK	Polygonaceae	H	0 7001 E	GO S	IP
0 Rumex	occidentalis		RUOC2	358	WESTERN DOCK	Polygonaceae	H	0 5001 F	W NP	
* Rumex	pulcher		RUPU	359	FIDDLE DOCK	Polygonaceae	H	0 5001 E	GO S	IP
0 Sagina	occidentalis		SAOC1	277	WESTERN PEARLWORT	Caryophyllaceae	H	0 8000CE	GO S	NA
0 Salsola	kali	tenuifolia	SAKAT	384	RUSSIAN THISTLE	Chenopodiaceae	H	0 6001	GO	IAF
0 Salvia	columbariae		SAC01	703	CHIA	Lamiaceae	H	0 4000C	O S	NA
* Salvia	spathacea		SASP	704	CRIMSON SAGE	Lamiaceae	H	0 2000C	O S	NP
* Sanicula	bipinnata		SAB12	1006	POISON SANICLE	Apiaceae	H	0 5000	GO S	NP
* Sanicula	bipinnatifida		SAB13	1005	PURPLE SANICLE	Apiaceae	H	0 6000C	GO	NP
* Sanicula	crassicaulis		SACR2	1005	GAMBLE WEED	Apiaceae	H	0 4500	GORS	NP
0 Sanicula	tuberosa		SATU	1006	TURKEY PEA	Apiaceae	H	0 8000C	O	NP
0 Satureja	douglasii		SADO1	708	YERBA BUENA	Lamiaceae	H	0 3000CE	RS	NP
* Saxifraga	californica		SACA2	736	CALIFORNIA SAXIFRAGE	Saxifragaceae	H	0 5000C	O S	NP
0 Scandix	pecten-veneris		SCPE	1008	SHEPHERD'S NEEDLE	Apiaceae	H	0 5001CE	GO S	IA
* Scrophularia	californica		SCCA2	642	CALIFORNIA FIGWORT	Scrophulariaceae	H	0 2000	RSW	NP
0 Scutellaria	tuberosa	similis	SCTUS	694	BLUE SKULL-CAP	Lamiaceae	H	0 5000C	O	NP
0 Sedum	spathulifolium		SESP2	727	MOSS SEDUM	Crassulaceae	H	0 7500 E	R	NP
0 Senecio	aronicoides		SEAR	1248		Asteraceae	H	0 8000C		NP
0 Senecio	breweri		SEBR	1251	BREWER SENECIO	Asteraceae	H	0 5500C	O	NP
0 Senecio	sylvaticus		SESY	1252	WOOD GROUNDSEL	Asteraceae	H	0 3001C	GO S	IA
* Senecio	vulgaris		SEVU	1252	COMMON GROUNDSEL	Asteraceae	H	0 5001CE	GORS	IA
0 Sherardia	arvensis		SHAR1	1045	BLUE FIELD MADDER	Rubiaceae	H	0 5001	GO	IA
0 Sidalcea	malvaeflora		SIMA1	132	CHECKER BLOOM	Malvaceae	H	0 2000 E	GO	NP
0 Silene	antirrhina		SIAN	287	SLEEPY CATCHFLY	Caryophyllaceae	H	0 5000CE	GO S	NA
0 Silene	californica		SICA2	288	INDIAN PINK	Caryophyllaceae	H	0 5000CE	O S	NP
0 Silene	gallica		SIGA	288	WINDMILL PINK	Caryophyllaceae	H	0 5001CE	GO S	IA
* Silybum	marianum		SIMA2	1273	MILK THISTLE	Asteraceae	H	0 5001CE	GORS	IA
0 Sisymbrium	officinale		SIOF	231	HEDGE MUSTARD	Brassicaceae	H	0 5000CE	GO S	IA
* Sisyrinchium	bellum		SIBE	1392	BLUE-EYED GRASS	Iridaceae	H	0 3000	GO	NP
0 Smilacina	racemosa	amplexicaulis	SMRAA	1331	FAT SOLOMON'S SEAL	Liliaceae	H	0 6000 E	R	NP
0 Smilacina	stellata	sessilifolia	SMSTS	1331	FALSE SOLOMON'S SEAL	Liliaceae	H	0 4001CE	R W	NP
0 Solanum	nigrum		SONI	597	BLACK NIGHTSHADE	Solanaceae	H	0 5001	GO	IA
0 Solidago	californica		SOCA2	1185	CALIFORNIA GOLDENROD	Asteraceae	H	200 7500CE	O S	NP
0 Soliva	sessilis		SOSE	1233		Asteraceae	H	0 3000 E	GO S	NA
* Sonchus	asper		SOAS	1304	PRICKLY SOW-THISTLE	Asteraceae	H	0 5001 E	GORS	IA
* Sonchus	oleraceus		SOOL	1303	COMMON SOW-THISTLE	Asteraceae	H	0 5001 E	GORS	IA
* Spargula	arvensis		SPAR	283	SPURREY	Caryophyllaceae	H	0 5001	GO	IA
0 Stachys	bullata		STBU	699	CALIFORNIA HEDGE NETTLE	Lamiaceae	H	0 4000CE	RS	NP
0 Stachys	chamissonis		STCH	699	HEDGE-NETTLE	Lamiaceae	H	0 2200 E	RS	NP
0 Stachys	pycnantha		STPY	700		Lamiaceae	H	0 3500 E	O	NP
0 Stachys	rigida	quercetorum	STRIQ	700	HEDGE NETTLE	Lamiaceae	H	0 5000 E	O S	NP
* Stellaria	media		STME	275	COMMON CHICKWEED	Caryophyllaceae	H	0 5001 E	ORS	IA
0 Stellaria	nitens		STNI	275	SHINING CHICKWEED	Caryophyllaceae	H	0 5500	GO	NA
0 Stephanomeria	virgata		STVI2	1295		Asteraceae	H	0 6000 E	GO S	NA
0 Streptanthus	glandulosus	albidus	STGLA	220	JEWEL FLOWER	Brassicaceae	H	0 4000C	O	NA
0 Stylocline	filaginea		STFI	1263		Asteraceae	H	0 5500C	O S	NA
0 Stylomecon	heterophylla		STHE2	200	WIND POPPY	Papaveraceae	H	0 4000C	GO	NA
* Taraxacum	officinale		TAOF	1310	COMMON DANDELION	Asteraceae	H	0 10000 E	GORS	IE
0 Tauschia	hartwegii		TAHA	1017		Apiaceae	H	0 5000C	O	NP
0 Thalictrum	polycarpum		THPO	107	FOOTHILL MEADOW RUE	Ranunculaceae	H	0 2500 E	O S	NP
0 Thelypodium	flavescens		THFL1	215		Brassicaceae	H	0 2000	G	NA
0 Thelypodium	lasiophyllum		THLA2	216	CUT-LEAVED THELYPODIUM	Brassicaceae	H	0 5000	GO	NA
* Thysanocarpus	curvipes		THCU	254	FRINGE-POD	Brassicaceae	H	0 5000C	GO S	NA
0 Thysanocarpus	laciniatus		THLA3	254		Brassicaceae	H	0 3500C	GO S	NA
0 Tillaea	aquatica		TIAQ	719	WATER PYGMY	Crassulaceae	H	0 2000		W NA
0 Tillaea	erecta		TIER	719	SAND PYGMY	Crassulaceae	H	0 2500CE	O S	NA
0 Tonella	tenella		TOTE	647		Scrophulariaceae	H	0 3000C	O	NA
0 Torilis	nodosa		TONO	1007	KNOTTED HEDGE PARSLEY	Apiaceae	H	0 2000 E	O	IA
0 Tragopogon	porrifolius		TRPO1	1301	OYSTER ROOT or SALSIFY	Asteraceae	H	0 5001	GO S	IE
0 Tribulus	terrestris		TRTE	159	PUNCTURE-VINE	Zygophyllaceae	H	0 5000	GO S	IA
0 Trichostema	lanceolatum		TRLA1	693	VINEGAR WEED / BLUE CURLS	Lamiaceae	H	0 3500C	O S	NA

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 13 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
O	Trientalis		TRLA3	404	STARFLOWER	Primulaceae	H	0 4500 E	R	NP
O	Trifolium		TRAL	838	RANCHERIA CLOVER	Fabaceae	H	0 4000	GO	NA
O	Trifolium	amplectens	TRAMT	841	BLADDER CLOVER	Fabaceae	H	0 2500	GO S	NA
O	Trifolium	barbigerum	TRBA	839	COLONY CLOVER	Fabaceae	H	0 1501 E	GO	W NP
O	Trifolium	bifidum	TRBID	834	PINOLE CLOVER	Fabaceae	H	0 2300 E	G	NA
O	Trifolium	ciliolatum	TRCI	835	TREE CLOVER	Fabaceae	H	0 5000 E	GO	NA
O	Trifolium	dichotomum	TRDI	838		Fabaceae	H	0 3500 E	GO	NA
O	Trifolium	fucatum	TRFU	841	BULL CLOVER	Fabaceae	H	0 3000		W NA
O	Trifolium	gracilentum	TRGR2	835	PIN-POINT CLOVER	Fabaceae	H	0 5000C	GO	NA
O	Trifolium	incarnatum	TRIN2	837	CLOVER	Fabaceae	H	0 4001	GO S	IA
O	Trifolium	microcephalum	TRMI2	839	MAIDEN CLOVER	Fabaceae	H	0 8500	GO	NA
O	Trifolium	microdon	TRMI3	839	THIMBLE CLOVER	Fabaceae	H	0 4000 E	G	NA
O	Trifolium	obtusiflorum	TROB2	841	CREEK CLOVER	Fabaceae	H	0 5000		W NA
O	Trifolium	oliganthum	TROL1	840	LANKY CLOVER	Fabaceae	H	0 3500 E	R	NA
O	Trifolium	olivaceum	TROL2	838		Fabaceae	H	0 1200	GO	NA
O	Trifolium	olivaceum	TROL2	838		Fabaceae	H	0 1200	GO	NA
O	Trifolium	tridentatum	TRTR2	841	TOMCAT CLOVER	Fabaceae	H	0 5000	GO	NA
O	Trifolium	variegatum	TRVA	840	WHITE-TIP CLOVER	Fabaceae	H	0 8000		W NA
O	Trifolium	wormskioeldii	TRWO2	840	COW CLOVER	Fabaceae	H	0 10000		W NP
O	Trillium	chloropetalum	TRCH	1355	TRILLIUM	Liliaceae	H	0 3500 E		RS NP
O	Trillium	chloropetalum	TRCHG	1355	RED TRILLIUM	Liliaceae	H	0 3500CE		NP
O	Trillium	ovatum	TROV2	1355	WESTERN WAKE ROBIN	Liliaceae	H	0 4001 E	R	NP
O	Triodanus	biflora	TRB12	1064		Campanulaceae	H	0 6500C		NA
O	Tropidocarpum	capparideum	TRCA2	245	ALKALI POD	Brassicaceae	H	0 3500	GO	NA
O	Tropidocarpum	gracile	TRGR4	244	WORM SEED MUSTARD	Brassicaceae	H	0 5000		W NP
*	Urtica	holosericea	URHO	920	CREEK NETTLE	Urticaceae	H	0 9000 E	OR SW	NP
O	Urtica	urens	URUR	921	DWARF NETTLE	Urticaceae	H	0 5001	G	IA
O	Verbena	lasiosstachys	VELA	687	VERVAIN	Verbenaceae	H	0 8000 E	GO S	NP
O	Verbena	robusta	VERO	688		Verbenaceae	H	0 5001 E	GO S	NP
*	Veronica	americana	VEAM	656	AMERICAN BROOKLIME	Scrophulariaceae	H	0 10500		R W NP
O	Veronica	peregrina	VEPEX	655	NECKWEED	Scrophulariaceae	H	0 10200		W NA
O	Veronica	persica	VEPE	656	PERSIAN SPEEDWELL	Scrophulariaceae	H	0 5001	G	IA
O	Vicia	americana	VIAMT	895	AMERICAN VETCH	Fabaceae	H	0 5000 E	GO S	NP
O	Vicia	angustifolia	VIAN	896	COMMON VETCH	Fabaceae	H	0 5001 E	GORS	IA
O	Vicia	dasycarpa	VIDA	896	WOOLLYPOD VETCH	Fabaceae	H	0 4001	G	IA
O	Vicia	exigua	VIEX	895	CALIFORNIA VETCH	Fabaceae	H	0 2000CE	GO S	NA
*	Vicia	sativa	VISA	896	SPRING VETCH	Fabaceae	H	0 5001CE	GO S	IA
*	Vinca	major	VIMA1	450	PERIWINKLE	Apocynaceae	H	0 4001 E	R	IF
O	Viola	adunca	VIAD	190	BLUE VIOLET	Violaceae	H	25 8500 E	OR	W NP
O	Viola	pedunculata	VIPE	188	GRASS PANSY	Violaceae	H	0 2500	GO S	NP
O	Viola	quercetorum	VIQU	188	OAK VIOLET	Violaceae	H	0 7000C	O	NI
O	Viola	sempervirens	VISE	185	REDWOOD VIOLET	Violaceae	H	0 3500 E	R	NP
*	Wyethia	angustifolia	WYAN	1085	MULE-EARS	Asteraceae	H	0 5500	GO	NI
O	Wyethia	glabra	WYGL	1084	MULE-EARS	Asteraceae	H	0 2700CE		NI
O	Wyethia	helenioides	WYHE	1084	WOOLLY MULE-EARS	Asteraceae	H	0 6000	GO	NI
O	Xanthium	spinosum	XASP	1105	SPINY CLOUTBUR	Asteraceae	H	0 3000CE	GO S	N
O	Xanthium	strumarium	XASTC	1105	COCKLE BUR	Asteraceae	H	0 6001CE	GO S	N
*	Zauschneria	californica	ZACA1	926	CALIFORNIA FUCHSIA	Onagraceae	H	0 3500CE	O S	N
*	Zigadenus	fremontii	ZIFR	1334	STAR ZYGADENE	Liliaceae	H	0 3500CE	GO	N

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 14 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
<u>GRASSES & GRASS-LIKE</u>										
O Agropyron	trachycaulum		AGTR1	1503	SLENDER WHEATGRASS	Poaceae	G	0 11000CE	G S NP	
O Agrostis	exarata		AGEX1	1522	SPIKE REDTOP	Poaceae	G	0 10000CE	GO SW NP	
O Agrostis	semiverticillata		AGSE	1520	WATER BENT	Poaceae	G	0 5001	G W IP	
O Aira	caryophyllea		AICA	1514	SILVER HAIRGRASS	Poaceae	G	0 5000CE	GO S IA	
* Alopecurus	pratensis		ALPR1	1523	MEADOW FOXTAIL	Poaceae	G	0 3001	F W IP	
* Avena	barbata		AVBA	1514	SLENDER WILD OAT	Poaceae	G	0 5001CE	GO S IA	
* Avena	fatua		AVFA	1514	WILD OAT	Poaceae	G	0 5001CE	GO S IA	
O Briza	maxima		BRMA1	1491	BIG QUAKING GRASS	Poaceae	G	0 5001CE	GO S IA	
* Briza	minor		BRMI1	1490	LITTLE QUAKING GRASS	Poaceae	G	0 5001CE	GO S IA	
O Bromus	carinatus		BRCA1	1470	CALIFORNIA BROME GRASS	Poaceae	G	0 10000CE	GO S NA	
* Bromus	diandrus		BRDI2	s187	RIPGUT / NEEDLE BROME	Poaceae	G	0 4001CE	GO S IA	
O Bromus	laevipes		BRLA1	1471	WOODLAND BROME GRASS	Poaceae	G	0 8600CE	O SW NP	
O Bromus	madritensis		BRMA2	1474	SPANISH BROME GRASS	Poaceae	G	0 5001CE	GO S IA	
* Bromus	mollis		BRMO2	1473	SOFT BROME or SOFT CHEAT	Poaceae	G	0 5001CE	GO S IA	
O Bromus	racemosus		BRRA	1473	SMOOTH BROME	Poaceae	G	0 5001CE	GO S IA	
* Bromus	rubens		BRRU	1474	RED / FOXTAIL BROME	Poaceae	G	0 4001CE	GO S IA	
O Bromus	tectorum		BRTE	1474	CHEAT GRASS	Poaceae	G	0 9001CE	GO S IA	
O Bromus	tririi		BRTR	1474	CHILEAN BROME GRASS	Poaceae	G	0 5000CE	GO S IA	
O Calamagrostis	rubescens		CARU	1517	PINEGRASS	Poaceae	G	0 2500CE	R NP	
O Carex	barbarae		CABA1	1459	SANTA BARBARA SEDGE	Cyperaceae	G	0 3000	E GO NP	
O Carex	bolanderi		CABO2	1443	BOLANDER'S SEDGE	Cyperaceae	G	150 8100	W NP	
O Carex	dudleyi		CADU1	1440	DUDLEY SEDGE	Cyperaceae	G	0 2500	E G W NP	
O Carex	globosa		CAGL1	1450	ROUND-FRUITED SEDGE	Cyperaceae	G	0 4200	E ORS NP	
O Carex	lanuginosa		CALA3	1455	WOOLLY SEDGE	Cyperaceae	G	0 10750	GO NP	
O Carex	serratodens		CASE2	1458	BIFID SEDGE	Cyperaceae	G	0 6000	E GO W NP	
O Cortaderia	selloana		COSE1	1496	PAMPAS GRASS	Poaceae	G	0 3001	GO S IP	
O Cynodon	dactylon		CYDA	1537	BERMUDA GRASS	Poaceae	G	0 3000CE	GO S NP	
* Cynosurus	echinatus		CYEC	1495	DOGTAIL GRASS	Poaceae	G	0 5001	GO IA	
O Cyperus	niger	capitatus	CYNIC	1424	BROWN CYPERUS	Cyperaceae	G	0 3000	W NP	
O Danthonia	californica		DACA1	1516	CALIFORNIA OATGRASS	Poaceae	G	0 5000C	GO S NF	
O Deschampsia	danthonioides		DEDA	1513	ANNUAL HAIRGRASS	Poaceae	G	0 9000	G SW NA	
O Echinochloa	crusgalli		ECCR	1547	WATER / BARNYARD GRASS	Poaceae	G	0 6001CE	GO SW IA	
* Elymus	glaucus		ELGL	1505	BLUE WILD-RYE	Poaceae	G	0 7500CE	GO S NF	
O Elymus	triticoideus		ELTR	1505	BEARDLESS WILD-RYE	Poaceae	G	0 7500CE	GO S NF	
O Equisetum	arvense		EQAR	28	COMMON HORSETAIL	Equisetaceae	G	0 10000	F W NF	
O Equisetum	funstoni		EQFU	27	FUNSTON SCOURING-RUSH	Equisetaceae	G	0 8000	W NA	
O Equisetum	hyemale	robustum	EQHYR	27	GIANT SCOURING-RUSH	Equisetaceae	G	0 8500CE	GORSW NF	
O Equisetum	telmateia	braunii	EQTEB	27	GIANT HORSETAIL	Equisetaceae	G	0 4500	W NF	
O Eragrostis	curvula		ERCU	1493	CREEPING LOVEGRASS	Poaceae	G	0 5001	GO NF	
O Festuca	californica		FECA	1477	CALIFORNIA FESCUE	Poaceae	G	0 6000CE	GO S NF	
O Festuca	confusa		FECO	1476	HAIRY-LEAVED FESCUE	Poaceae	G	0 5000CE	GO S NA	
O Festuca	dertonensis		FEDE	1476		Poaceae	G	0 5001CE	GO S IA	
O Festuca	eastwoodae		FEEA	1476	EASTWOOD FESCUE	Poaceae	G	0 5001CE	GO S NA	
O Festuca	elmeri		FEEL2	1477	ELMER FESCUE	Poaceae	G	0 5000	E O NF	
O Festuca	grayi		FEGR	1476	GRAY'S FESCUE	Poaceae	G	0 6000CE	GO S NA	
O Festuca	megalura		FEME	1476	FOXTAIL FESCUE	Poaceae	G	0 5500CE	GO S NA	
* Festuca	microstachys		FEMI	1476		Poaceae	G	0 5500CE	GO S NA	
O Festuca	myuros		FEMY	1476	RAT-TAIL FESCUE	Poaceae	G	0 5500CE	GO S NA	
O Festuca	octoflora		FEOC2	1476	SIX-WEEKS FESCUE	Poaceae	G	0 5000CE	GO S NA	
O Festuca	pacifica		FEPA	1476	PACIFIC FESCUE	Poaceae	G	0 5000CE	GO S NA	
O Festuca	reflexa		FERE	1476	FEW-FLOWERED FESCUE	Poaceae	G	0 5000CE	GO S NA	
O Gastridium	ventricosum		GAVE1	1525	NIT-GRASS	Poaceae	G	0 5001	GO S IA	
O Heleocharis	montevidensis	parishii	HEMOP	1420	PURPLE SPIKE-RUSH	Cyperaceae	G	0 7000	W NF	
O Heleocharis	palustris		HEPA2	1421	COMMON SPIKE-RUSH	Cyperaceae	G	0 8000	W NF	
O Hierochloa	occidentalis		HIOC	1541	VANILLA GRASS	Poaceae	G	0 2000	E R NF	
O Holcus	lanatus		HOLA1	1515	VELVET GRASS	Poaceae	G	0 7500	GO I	
O Hordeum	brachyantherum		HOBR	1508	MEADOW BARLEY	Poaceae	G	0 11000CE	GO SW N	
O Hordeum	geniculatum		HOGES	s190	MEDITERRANEAN BARLEY	Poaceae	G	0 6001CE	GO S I	
* Hordeum	leporinum		HOLE	1509	FOXTAIL BARLEY	Poaceae	G	0 5001CE	GOR I	

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 15 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype	IN/
O Isoetes	howellii		ISHO	26	HOWELL QUILLWORT	Isoetaceae	G	0 9000	W NP	
O Juncus	balticus		JUBA	1405	WIRE RUSH	Juncaceae	G	0 9000	W NP	
O Juncus	bufonius		JUBU	1405	TOAD RUSH	Juncaceae	G	0 8000	W NA	
O Juncus	effusus	pacificus	JUEFP	1404	BOG RUSH	Juncaceae	G	0 8000	W NP	
O Juncus	mexicanus		JUME3	1404	MEXICAN RUSH	Juncaceae	G	0 11000	W NP	
O Juncus	patens		JUPA2	1404	SPREADING RUSH	Juncaceae	G	0 5000	W NP	
O Juncus	xiphioides		JUXI	1411	IRIS-LEAVED RUSH	Juncaceae	G	0 7000	W NP	
* Koeleria	cristata		KOCR	1511	JUNEGRASS	Poaceae	G	0 11500CE	GO S NP	
* Lolium	multiflorum		LOMU	1510	ITALIAN RYEGRASS	Poaceae	G	0 4001CE	GO S IP	
O Lolium	perenne		LOPE1	1509	PERENNIAL RYEGRASS	Poaceae	G	0 4001CE	GO S IP	
* Lolium	temulentum		LOTE	1510	DARNEL	Poaceae	G	0 4000CE	GO S IA	
O Luzula	subsessilis		LUSU2	1413	FOOTHILL WOOD-RUSH	Juncaceae	G	0 4000 E	GO S NP	
O Melica	californica		MECA1	1498	CALIFORNIA MELIC	Poaceae	G	0 3000 E	GO NP	
O Melica	imperfecta		MEIM	1498	SMALL-FLOWERED MELIC	Poaceae	G	0 4000C	O S NP	
O Melica	torreyana		METO1	1498	TORREY MELIC	Poaceae	G	0 2500CE	NP	
O Phalaris	minor		PHMI1	1542	CANARY GRASS	Poaceae	G	0 5001CE	GO S IA	
* Phalaris	tuberosa	stenoptera	PHTUS	1542	HARDING GRASS	Poaceae	G	0 3001	G W IP	
* Poa	annua		POAN1	1484	ANNUAL BLUEGRASS	Poaceae	G	0 3000CE	GO S IA	
O Poa	bolanderi	howellii	POBOH	1484	HOWELL BLUEGRASS	Poaceae	G	0 2500	O NA	
* Poa	scabrella		POSC3	1489	PINE BLUEGRASS	Poaceae	G	0 5000CE	GO S NP	
O Polypogon	interruptus		POIN2	1524	DITCH POLYPOGON	Poaceae	G	0 5001CE	GO SW IP	
* Polypogon	monspeliensis		POMO1	1524	RABBITFOOT GRASS	Poaceae	G	0 5001CE	GO SW IA	
O Scirpus	acutus		SCAC	1418	COMMON TULE	Cyperaceae	G	0 5000	F W NP	
O Scirpus	americanus		SCAM	1417	THREE-SQUARE	Cyperaceae	G	0 7000	W NP	
O Scirpus	microcarpus		SCMI	1416	PANICLED BULRUSH	Cyperaceae	G	0 9000	W NP	
O Sitanion	hansenii		SIHA1	1506	HANSEN SQUIRRELTAIL	Poaceae	G	0 13000CE	GO S NP	
O Sitanion	hystrix		SIHY	1506	SQUIRRELTAIL	Poaceae	G	0 13000CE	GO S NP	
O Sitanion	jubatum		SIJU	1506	BIG SQUIRRELTAIL	Poaceae	G	0 10000CE	GO S NP	
O Stipa	lepida		STLE2	1532	FOOTHILL NEEDLEGRASS	Poaceae	G	0 4000C	GO S NP	
* Stipa	pulchra		STPU	1532	PURPLE NEEDLEGRASS	Poaceae	G	0 5000C	GO S NP	
O Typha	domingensis		TYDO	1367	CAT-TAIL	Typhaceae	G	0 5000	F NP	
* Typha	latifolia		TYLA	1367	COMMON CAT-TAIL	Typhaceae	G	0 5000	F NP	

PLANT LIST - DIABLO FOOTHILLS REGIONAL PARK - May 29, 1989

----- PAGE 16 -----

Genus	Species	Variety	Vegcode	Munz	Common Name	Family	Strata	E-Range	Vegtype
<u>FERNS</u>									
* Adiantum	jordani		ADJO	38	CALIF. MAIDENHAIR FERN	Pteridaceae	F	0 3500CE	RS }
O Adiantum	pedatum	aleuticum	ADPEA	38	FIVE-FINGER FERN	Pteridaceae	F	0 10500CE	R }
O Aspidotis	californica		ASCA1	35	CALIFORNIA LACE FERN	Pteridaceae	F	0 2500 E	ORS }
O Cystopteris	fragilis		CYFR	43	BRITTLE or BLADDER FERN	Aspidiaceae	F	0 1000 E	OR W }
O Dryopteris	arguta		DRAR	42	COASTAL WOOD-FERN	Aspidiaceae	F	0 5000 E	ORS }
* Pellaea	andromedaefolia		PEAN1	36	COFFEE FERN	Pteridaceae	F	0 4000CE	ORS }
O Pellaea	mucronata		PEMU	36	BIRD'S-FOOT FERN	Pteridaceae	F	0 6000CE	O S }
* Pityrogramma	triangularis		PITR	37	GOLDENBACK FERN	Pteridaceae	F	0 5000 E	ORS }
* Polypodium	californicum		POCA1	45	CALIFORNIA POLYPODY FERN	Polypodiaceae	F	0 4000CE	RS }
O Polystichum	munitum		POMU1	40	SWORD FERN	Aspidiaceae	F	0 2500 E	R }
O Pteridium	aquilinum	pubescens	PTAQP	31	BRACKEN FERN	Pteridaceae	F	0 10000CE	GORS }
O Woodwardia	fimbriata		WOFI	44	CHAIN FERN	Blechnaceae	F	0 5000 E	R W }

APPENDIX D

LIST OF WILDLIFE SPECIES

WILDLIFE LIST - KEY TO ABBREVIATIONS

*	Confirmed sighting
O	Expected
Habitat	
	A Aquatic (saltwater) = bay or estuary
	B Broadleaf evergreen & mixed coniferous forest, redwoods
	C Chaparral
	G Grassland
	L Lakes
	Mf Marsh (Freshwater)
	Ms Marsh (Saltwater)
	N coastal strand, beaches
	O Oak woodland, savanna
	R Redwoods, coniferous forest, needle-leaf trees
	S coastal Scrub, brush
	W riparian Woodland
Frequency	
	R Resident all year
	M Migrant, including seasonal residents
	F Fall
	Sp Spring
	Su Summer
	W Winter
	a Abundant
	c Common
	fc Fairly Common
	u Uncommon
	r Rare
NI	
	N Native
	I Introduced

WILDLIFE LIST - DIABLO FOOTHILLS - July 31, 1989

----- PAGE 2 -----

Genus	Species	Variety	Family	Common Name	Habitat	Frequency
<u>Amphibians</u>						
O Ambystoma	tigrinum	californiense	Ambystomatidae	California tiger salamander	B GL	O W
* Batrachoseps	attenuatus		Plethodontidae	California slender salamander	B G	ORSW
O Bufo	boreas	halophilus	Bufonidae	California western toad	B GL	ORSW
O Ensatina	eschschoeltzi	xanthoptica	Plethodontidae	Yellow-eyed salamander	B	ORSW
* Hyla	regilla		Hylidae	Pacific treefrog	B GLMf	ORSW
O Rana	aurora	draytoni	Ranidae	California red-legged frog	B GLMf	OR W
O Taricha	granulosa	granulosa	Salamandridae	Northern rough-skinned newt	B GL	ORSW
O Taricha	torosa	torosa	Salamandridae	Coast range california newt	B GL	ORSW
<u>Reptiles</u>						
O Charina	bottae	bottae	Boidae	Pacific rubber boa	B G	ORSW
O Contia	tenuis		Colubridae	Sharp-tailed snake	B G	ORSW
O Crotalus	viridis	oreganus	Viperidae	N. Pacific western rattlesnake	BCG	NORSW
O Diadophis	punctatus	amabilis	Colubridae	Pacific ringneck snake	BCG	ORS
O Eumeces	skiltonianus	skiltonianus	Scincidae	Western skink	B G	ORSW
* Gerrhonotus	multicarinatus	multicarinatus	Anguidae	Calif. southern alligator lizard	BCG	ORS
O Hypsiglena	torquata	nuchalata	Colubridae	California night snake	BCG	O S
O Lampropeltis	getulus	californiae	Colubridae	California common kingsnake	BCG Mf	ORSW
O Masticophis	lateralis	euryxanthus	Colubridae	Alameda whipsnake	BCG	SW
* Pituophis	melanoleucus	catenifer	Colubridae	Pacific gopher snake	B G	ORS
* Sceloporus	occidentalis	occidentalis	Iguanidae	Western fence lizard	B G	O S
* Thamnophis	elegans	terrestris	Colubridae	Western terrestrial garter snake	BCG	ORS

WILDLIFE LIST - DIABLO FOOTHILLS - July 31, 1989

----- PAGE 3 -----

Genus	Species	Variety	Family	Common Name	Habitat	Frequency
<u>Birds</u>						
O	Accipiter	cooperii	Accipitridae	Cooper's hawk	B	R W MuW, rS
O	Aeronautes	saxatalis	Apodidae	White-throated swift	B	R W McS, fcW
*	Agelaius	phoeniceus	Emberizidae	Red-winged blackbird	Mf	W Ra
O	Aimophila	ruficeps	Emberizidae	Rufous-crowned sparrow	B G	S Ru
O	Ammodramus	savannarum	Emberizidae	Grasshopper sparrow	G	O MrS
*	Anas	platyrhynchos	Anatidae	Mallard	A GLMfMsN	McW, fcS
*	Aphelocoma	coerulescens	Corvidae	Scrub jay	BC	O SW Rc
*	Aquila	chrysaetos	Accipitridae	Golden eagle	BCG	ORSW Ru
O	Archilochus	alexandri	Trochilidae	Black-chinned hummingbird	BC	SW MrS
*	Bubo	virginianus	Strigidae	Great horned owl	B Mf	R W Rc
*	Buteo	jamaicensis	Accipitridae	Red-tailed hawk	B G	O Rc
*	Callipepla	californica	Phasianidae	California quail	BC	O S Rc
*	Calypte	anna	Trochilidae	Anna's hummingbird	BC	Rc
O	Carduelis	lawrencei	Fringillidae	Lawrence's goldfinch	BC	O W MuS, rW
O	Carduelis	psaltria	Fringillidae	Lesser goldfinch	B	SW Rc
*	Carduelis	tristis	Fringillidae	American goldfinch	B	W Rc
*	Carpodacus	mexicanus	Fringillidae	House finch	B	SW Ra
*	Cathartes	aura	Cathartidae	Turkey vulture	BCG	ORSW McS, fcW
O	Catharus	ustulatus	Muscicapidae	Swainson's thrush	B	R W McS
O	Catherpes	mexicanus	Troglodytidae	Canyon wren		W Rr
O	Chamaea	fasciata	Muscicapidae	Wrentit	BC	S Rc
*	Charadrius	vociferus	Charadriidae	Killdeer	A GL	N W McW, fcS
O	Chondestes	grammacus	Emberizidae	Lark sparrow	G	O S Rc
*	Colaptes	auratus	Picidae	Northern (red-shafted) flicker	B	OR W McW, fcS
*	Columba	fasciata	Columbidae	Band-tailed pigeon	B	OR McW, uS
O	Contopus	sordidulus	Tyrannidae	Western wood-pewee	B	R W MfcS
*	Corvus	brachyrhynchos	Corvidae	American crow	B G	N W MaW, cS
O	Dendroica	coronata	Emberizidae	Yellow-rumped (myrtle) warbler	B	RSW McW
O	Dendroica	nigrescens	Emberizidae	Black-throated gray warbler	BC	ORS MuFSp, rS
O	Elanus	caeruleus	Accipitridae	Black-shouldered kite	G Mf	O W Rc
O	Empidonax	difficilis	Tyrannidae	Western flycatcher	B	R W McS
O	Eremophila	alpestris	Alaudidae	Horned lark	G	Rc
*	Euphagus	cyanocephalus	Emberizidae	Brewer's blackbird	B GLMf	SW Ra
O	Falco	columbarius	Falconidae	Merlin	B G	O MrW
*	Falco	mexicanus	Falconidae	Prairie falcon	G	O Rr
O	Falco	peregrinus	Falconidae	Peregrine falcon	B	OR MrW
*	Falco	sparverius	Falconidae	American kestrel	G	O Rc
O	Guiraca	caerulea	Emberizidae	Blue grosbeak	B	SW MuS
*	Hirundo	pyrrhonota	Hirundinidae	Cliff swallow	GL	O W MaS
O	Hirundo	rustica	Hirundinidae	Barn swallow	GLMf	O W McS
O	Icterus	galbula	Emberizidae	Northern oriole	B	W McS
O	Lanius	ludovicianus	Laniidae	Loggerhead shrike	B G	O S Rfc
*	Melanerpes	formicivorus	Picidae	Acorn woodpecker	B	O W Rfc
*	Melospiza	melodia	Emberizidae	Song sparrow	Mf	SW Rc
*	Mimus	polyglottos	Mimidae	Northern mockingbird	B G	S Rc
O	Molothrus	ater	Emberizidae	Brown-headed cowbird	B G	W Rc
O	Oporornis	tolmiei	Emberizidae	MacGillivray's warbler	B	RSW MuSp, rS
O	Otus	kennicottii	Strigidae	Western screech owl	B	O SW Rc
O	Parus	inornatus	Paridae	Plain titmouse	B	O W Rc
O	Passer	domesticus	Passeridae	English sparrow	B	Rc
O	Passerculus	sandwichensis	Emberizidae	Savannah sparrow	G MfMs	McW, fcS
O	Passerella	iliaca	Emberizidae	Fox sparrow	BC	RSW McW
O	Phainopepla	nitens	Ptilonotidae	Phainopepla	B	O SW MuS, rW
O	Phalaenoptilus	nuttallii	Caprimulgidae	Common poorwill	B G	O SW MuS
O	Picoides	nuttallii	Picidae	Nuttall's woodpecker	C	O W Rfc
O	Picoides	pubescens	Picidae	Downy woodpecker	B	W Rfc
O	Pipilo	erythrophthalmus	Emberizidae	Rufous-sided towhee	BC	SW Rc
*	Pipilo	fuscus	Emberizidae	Brown towhee	C	SW Rc
O	Poliophtila	caerulea	Muscicapidae	Blue-gray gnatcatcher	BC Mf	SW MfcS, rW

WILDLIFE LIST - DIABLO FOOTHILLS - July 31, 1989

----- PAGE 4 -----

Genus	Species	Variety	Family	Common Name	Habitat	Frequency
* Psaltriparus	minimus		Aegithalidae	Bushtit	BC	S Rc
0 Sayornis	nigricans		Tyrannidae	Black phoebe	B G	W Rfc
0 Selasphorus	sasin		Trochilidae	Allen's hummingbird	BC	RSW McS
0 Sialia	currucoides		Muscicapidae	Mountain bluebird	B	OR MrW
0 Sitta	carolinensis		Sittidae	White-breasted nuthatch	B	R W Rc
0 Spizella	atrogularis		Emberizidae	Black-chinned sparrow	C	S MUS
0 Spizella	passerina		Emberizidae	Chipping sparrow	B	ORS MUS
0 Stelgidopteryx	serripennis		Hirundinidae	Northern rough-winged swallow	GL	O W McFSP, uS
* Sturnella	neglecta		Emberizidae	Western meadowlark	G	O Rc
* Sturnus	vulgaris		Sturnidae	European starling	B G	Ra
0 Thryomanes	bewickii		Troglodytidae	Bewick's wren	BC	S Rc
0 Toxostoma	redivivum		Mimidae	California thrasher	BC	SW Rfc
* Turdus	migratorius		Muscicapidae	American robin	B	W MaW, cS
0 Tyrannus	verticalis		Tyrannidae	Western kingbird	G	O W MfcS
0 Tyto	alba		Tytonidae	Common barn owl	G	O Rfc
0 Vireo	huttoni		Vireonidae	Hutton's vireo	B	O S Rc
0 Wilsonia	pusilla		Emberizidae	Wilson's warbler		SW McFSp, fcS
* Zenaida	macroura		Columbidae	Mourning dove	B G	OR Rc
0 Zonotrichia	atricapilla		Emberizidae	Golden-crowned sparrow		RSW McW
0 Zonotrichia	leucophrys		Emberizidae	White-crowned sparrow	CG	S McW, fcS

WILDLIFE LIST - DIABLO FOOTHILLS - July 31, 1989

----- PAGE 5 -----

Genus	Species	Variety	Family	Common Name	Habitat	Frequency
<u>Mammals</u>						
O Antrozous	pallidus		Vespertilionidae	Pallid bat	B G	OR
O Bassariscus	astutus		Procyonidae	Ringtail	BC	SW
* Canis	latrans		Canidae	Coyote	B G	O S
O Didelphis	marsupialis		Didelphidae	Common opossum	B	W
O Dipodomys	heermanni		Heteromyidae	Heermann kangaroo rat	CG	O S
O Felis	concolor		Felidae	Mountain lion	BC	RS
O Lasiurus	borealis		Vespertilionidae	Red bat	B	W
O Lynx	rufus		Felidae	Bobcat	BC	RS
O Mephitis	mephitis		Mustelidae	Striped skunk	BCG	O SW
O Mus	domesticus		Muridae	House mouse	G Ms	S
O Mustela	frenata		Mustelidae	Long-tailed weasel	BCG Mf	ORSW
O Myotis	californicus		Vespertilionidae	California myotis	BC	O W
O Myotis	yumanensis		Vespertilionidae	Yuma myotis	B	R W
O Neotoma	fuscipes		Cricetidae	Dusky-footed woodrat	BC	SW
* Odocoileus	hemionus	columbianus	Cervidae	Mule deer	BCG	RS
O Peromyscus	boylii		Cricetidae	Brush mouse	C	S
O Peromyscus	californicus		Cricetidae	California mouse	BC	O
O Peromyscus	maniculatus		Cricetidae	Deer mouse	BCG	ORS
O Peromyscus	trueii		Cricetidae	Pinyon mouse	BC	S
O Pipistrellus	hesperus		Vespertilionidae	Western pipistrelle	G	O W
* Procyon	lotor		Procyonidae	Raccoon	B LMf	R W
* Rattus	rattus		Muridae	Black rat	B	W
O Reithrodontomys	megalotis		Cricetidae	Western harvest mouse	B G	SW
O Scapanus	latimanus		Talpidae	Broad-footed mole	B G	W
O Sorex	ornatus		Soricidae	Ornate shrew	B G	
O Spermophilus	beecheyi		Sciuridae	California ground squirrel	G	O
O Spilogale	putorius		Mustelidae	Spotted skunk	BCG	O SW
O Sylvilagus	audubonii		Leporidae	Audubon cottontail	B G	O SW
* Sylvilagus	bachmani		Leporidae	Brush rabbit	BC	RS
O Tadarida	brasiliensis		Molossidae	Mexican free-tailed bat	BCG	ORSW
* Thomomys	bottae		Geomyidae	Botta pocket gopher	B G	O
* Urocyon	cinereoargenteus		Canidae	Gray fox	BC	S
O Vulpes	fulva		Canidae	Red fox	B G	O

APPENDIX E

LIST OF FISH AND AQUATIC INVERTEBRATES

Diablo Foothills Aquatic Invertebrate List

Insects

<u>Common Name</u>	<u>Order</u>	<u>Abundance</u>
Mayflies	Ephemeroptera	C
Caddisfly	Trichoptera	C
Trueflies	Diptera	C
Water Beetles	Coleoptera	C
Water Bugs	Hemiptera	C

Vertebrate

Amphibians

Treefrogs, etc.	<u>Hyla sp</u>	R
California newt	<u>Taricha torosa</u>	C

U.C. BERKELEY LIBRARIES



C124922054